



# TRUST IN Tillage

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Dairygold's Agronomy Bulletin

## HARVEST 2016 KICKS OFF

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Dear Trust in Tillage reader,

Welcome to our August edition of TRUST IN TILLAGE, Dairygold's Agronomy Bulletin. I hope our readers will be able to take some time out from harvesting their crops to read the relevant sections of this bulletin, because it should be of benefit to them.



The harvest remains difficult and there is still an amount of winter barley to be cut. Some winter oats have been cut and yield are disappointing with low bushels. Winter rape is yielding around 1.6 tonnes. Straw, has been difficult to bale in the broken weather and some farmers are chopping it to increase their organic matter. Catch crops should be planted as soon as possible post harvest to optimise yield. Catch crops are an investment in the quality of your soil.

We have our usual articles like our Regional Report which is from Tipperary and our Crop Watch. We have many interesting articles like a look at cover crops, using straw as an energy source, treated urea, harvest report.

Be sure to contact our specialised tillage team for sound advice and support to help you deliver the best return from your crops into the future.

Thank you for your feedback on our last edition and if there is any area you would like us to cover in a future edition please contact me or any member of the team. My email address is [ngriffey@dairygold.ie](mailto:ngriffey@dairygold.ie)

Yours Sincerely,

*Nial Griffey*

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TILLAGE TECHNICAL MANAGER,  
DAIRYGOLD AGRIBUSINESS

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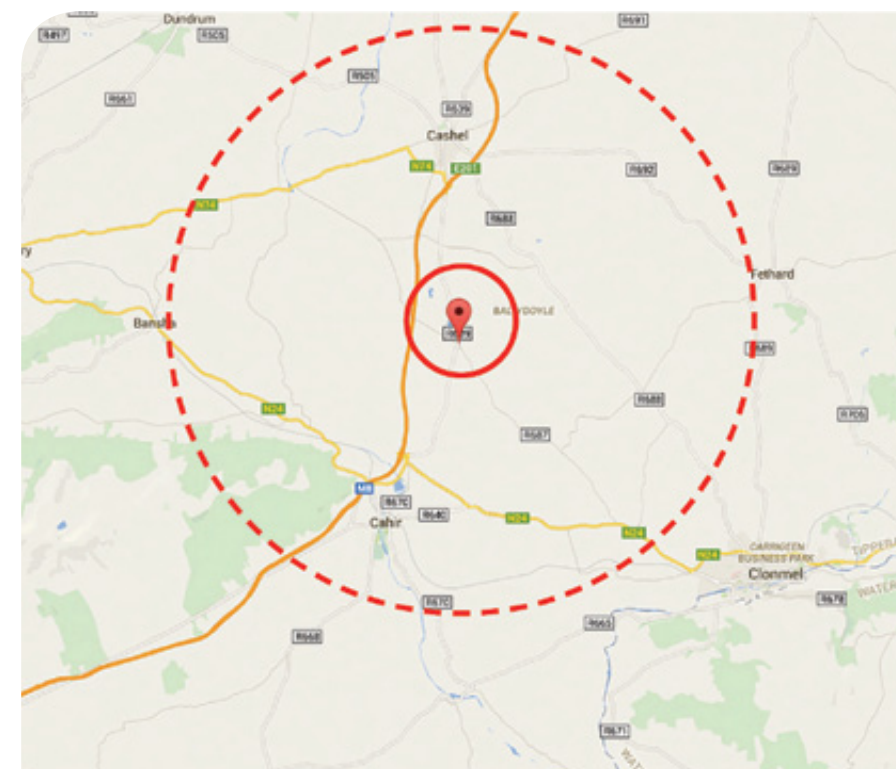
TRUST IN  
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## Regional Report

### LOCAL UPDATE (AUGUST 2016)

Here in Tipperary the harvest is well under way. The first winter barley of 2016 was delivered into Dairygold Outrath on the 14th of July and there has been a steady flow since once the weather allowed. Most farmers are reporting that yield is back between 0.5 - 1 tonne an acre from last year. In general the moisture content of the barley has been low averaging between 15 and 17%. The KPH of the barley has been quite poor especially with

6 row varieties, some 6 row barley is busheling as low as 52 kph however this is an extreme case and most of the barley is coming in with a kph of over 60 which is not too bad considering the type of year that is just gone by. Some oats have also been delivered to Outrath and are thought to be of good quality although yield is back slightly from last year the oats delivered to Outrath averaged 52kph at 18% moisture. The harvest of winter wheat has not yet begun but the crops are in good condition.

**KEY POINT:** Most farmers are reporting that yield is back between 0.5 -1 tonne an acre from last year.





Lodging hasn't been that much of an issue in this year crops and crows also haven't caused the same amount of damage as they did in previous years.

Even though spring crops got off to a poor start in cold wet spring they have come through it in good condition. Early sown spring barley is on par with the quality of barley we have seen in the past few years and later sown barley has caught up nicely and is now as good as they early sown crops if not better in some cases. Here in Tipperary capping was a problem for some of the spring barley as the heavy rain followed by a dry spell caused the ground to cap just as the plants were starting to emerge. The yield of these fields will be expected to be hit badly and poor plant count will be the problem as the plants failed to break through the hard cap on the surface of the soil. In some cases where the plant count was very low due to the capping some unfortunate farmers can be expecting to see yields as low as 2 tonne per acre. At the moment disease



pressure is relatively low in spring barley but fusarium is starting to show in some crops, thankfully due to advances in seed treatment technology incidents of smut have been greatly reduced and cases of smut in spring barley are very rare.

**KEY POINT:** Even though spring crops got off to a poor start in cold wet spring they have come through it in good condition.



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# CROP *Watch*



## WINTER BARLEY:

The vast majority of winter barley has now been harvested and yields are down from last year by roughly .5-1 tonne an acre. The quality of the barley is also back from last year the KPH of the barley was averaging 60 this year which will disappoint many farmers. Poor yield and poor quality could result in a big drop in the area of winter barley sown next year.



## WINTER WHEAT:

The harvest of winter wheat has not yet started and it is expected that it will be another 10 days before it will begin. Disease pressure is relatively low in winter wheat with the majority of crops very clean. Crops are looking good with good heads and strong straw. Lodging hasn't been a major issue yet this year in wheat but if the rain and wind picks up lodging may become a common sight especially in crops with heavy heads.





OATS:

Many of the oats have been cut now and farmers are generally happy with the yield and the quality of the oats. Oats in Outrath have been averaging 18% moisture and 52KPH. The three crop rule has led to a big increase in the area of oats sown in this area and the good harvest this year may be the start to further increase.



WINTER OIL SEED RAPE:

Most farmers by now have desiccated their crops of oil seed rape and are waiting patiently for the weather to allow harvest begin. Farmers are expecting a good harvest from oil seed rape but nothing can be guaranteed until the harvest starts.



SPRING BARLEY:

There is a huge variation in the quality of spring barley in the area. Some of the early crops that got in in ideal conditions are miles ahead to some late sown barley. However, some of the late sown barley that got a good start has caught up with the early barley and now no difference can be seen but some crops that started poorly will see very poor yields mainly due to poor plant numbers. Some late sown crops experienced a very short tillering period as the plants progressed quickly through the growth stages in late May and early June. Spring barley is starting to suffer slightly now from disease and pressure is starting to increase now. Fusarium is starting to make its way into many crops of spring barley and is becoming a worry for some farmers as the weather conditions are ideal for its spread. Lodging is going to be a problem this year for crops with big heads. Rapid growth in May and June has left the straw in spring barley weak and will leave barley very easy to knock if this wet and windy weather continues.

**KEY POINT:** Spring barley is starting to suffer slightly now from disease and pressure is starting to increase now.



BEANS:

Beans are looking very healthy in the area. Disease pressure especially chocolate spot was very high during the summer but any farmer who used a preventative spray will not have experienced this problem. The bean plants have good number of pods which are starting to swell nicely. The Black Bean aphid has been seen in some place but at no point was the infection rate sufficient enough to economically justify controlling them.







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EVER WONDER HOW YOUR CERTIFIED SEED IS FREE FROM WEEDS?

## Ever wonder how your certified seed is **FREE FROM WEEDS?**

Regular crops inspections ensure that Irish crops destined for the seed market are clean of both weeds and off-types, according to the Irish Seed Trade Association (ISTA). The overall aim, it says, is to ensure the quality and purity of the crop is at a superior level as these seed crops will be sold commercially. Stringent crop inspections and monitoring allows for the production of excellent quality crops in Ireland year-after-year. Additionally, it gives Irish farmers peace of mind when purchasing certified seed that has been produced to an excellent quality and purity standard. Carrying out regular inspections allows potential issues to be identified earlier and rectified quicker in the season. According to the ISTA, rogueing is just one procedure used to ensure the purity of certified seed produced here in Ireland.



**KEY POINT:** Rogueing is the removal of any unwanted plants by hand from a crop and it is routine for both Department of Agriculture and seed companies to carry out this process.

During the rogueing stage, characteristics observed are; the plants themselves, weed contamination and in the case of Oilseed Rape (OSR) the leaf shape is observed. For cereal crops, it says, regular crop inspections are carried out to identify weeds or wild oats that may be present in the field. One of the most common weeds present in cereal crops are wild oats. It also says that special care must be taken to inspect near hedge rows, around ESB poles or any sheds present in the field. These areas may be home to weeds or wild oats, as the sprayer's boom is not able to get close enough.





# FAILING TO **MANAGE** DISEASE IN SPRING BARLEY COULD LEAD TO A 10-30% YIELD LOSS



Failing to manage the disease level in spring barley could result in a 10-30% yield loss. Yield loss will depend on the disease pressure and is difficult to predict what level of pressure there is going to be. Therefore, fungicide treatments are essential to protect crops from a disease outbreak and to give farmers the best possible yield.



## A SPRING OF TWO SOWING DATES:

This spring has been quite unusual, as some spring barley crops were sown in March, while the remainder where; sown in late April. The fungicide should be applied once the spring barley plant has reached growth stage 31-32. Farmers should aim to apply the second fungicide treatment when the awns on the spring barley crop start to appear. The first and second fungicide treatments are key to producing a high yielding, quality spring barley crop. Some farmer's view the first treatment as less important but, the research backs up the need for it.

## WINTER WHEAT CROPS NEED A FUNGICIDE TOP UP:

Winter wheat growers should also focus on the final fungicide treatment to ensure good grain quality and yield. Fungicide treatment could also result in an increase in yield, as it slows down the senescence of wheat plant, keeping the leaves greener for long. And, each day plant senescence is delayed; the yield of the wheat crop will increase by 0.1-0.15t/ha.



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# WILL FARMERS BE QUESTIONING: DO COVER CROPS HAVE A VALID PLACE *in crop rotations after 2016?*

## NEGATIVE EXPERIENCES FROM 2016:

- Soils have been far too wet after on the surface after the cover crops which led to delayed ploughing and delayed sowing of spring crops.
- Crops suffered increased damage from a highly increased slug population left after the cover crop.
- Farmers found the spring crops slow to take off after the cover crops.
- Poor seed bed formation when direct drill was used after the cover crops.
- Farmers didn't see the return from the high input cost associated with putting in the cover crops.



## How can these negatives be ratified?

Although these symptoms are being reported by farmers for the first time post cover crops, not all the blame can be put on the cover crops. In regards the soils being wet in the spring the extremely wet weather at this time and throughout the winter must be considered. The winter and spring gone past have been some of the wettest in recorded history and they left soils in a saturated condition and seriously delayed the ploughing and sowing of spring crops even in fields where there were no cover crops, so cover crops cannot take all the blame. In some cases the cover crops did cause the soils to be significantly wetter than normal but this was not a problem caused by simply having the cover crops but by the wrong selection of species. When a cover crop is sown

and is in the soil for the autumn and winter water is drawn to the roots through capillary action which causes the surface to become wetter than it would normally be but once that plant dies the roots will stop drawing up water and any excess water will evenly disperse into the soil again and sun and wind will dry the surface. This is where species selection will play a major part especially in heavier soils that will take longer to dry. In heavy soil only species that will be dead before Christmas should be used and if they are not dead at Christmas desiccation should be considered to allow the soil as much time as possible to dry out before cultivation in the following spring. This is not as much as an issue in dry sandy soils where water will drain freely and quickly.

Although the increased population of slugs is evident in fields post cover crops the same can be said for fields that did not have any cover crops over the winter. The extremely mild and wet winter meant that conditions were ideal for the slug population. The mild winter meant that there was no winter kills as slugs enjoyed the warm conditions which meant the population increased seriously over the winter period gone past. In some cases the populations can be seen to be even higher in cover crops but this is only down to the fact to the food source at the time but as the cover crop dies off the slugs will too as their food source disappears.

When you consider the slow start that farmers are reporting after cover crops the cover crop cannot take all the blame. The extremely wet weather must be taken into account for this as well. Crops sown in fields which had never had a cover crop were slow to get going this year and it is all down to the poor weather conditions at the time of sowing and in the first few weeks after sowing. The bad weather this spring caused numerous problems for tillage farmer and slowing down plants early growth was one of them.

Farmer and contractors who were using direct drilling after claimed that it was difficult to form a suitable seedbed in fields where cover crops

were present. This cannot be solely blamed on the presence of the cover crop but the species type used. Like in heavy soils when you are direct drilling it is important that the cover crop is dead and has rotted away and all the water around the root has been evenly divided in the soil once again. If direct drilling is going to be the establishment method of choice it is important that a species that will die off early is used and if not desiccation should be considered in extreme cases but only as a last resort as the use of glyphosate chemicals should be restricted as to reduce the chances of resistance building up.

Nearly every farmer is saying the same thing in their first year after the cover crop was sown 'I didn't see the return for the input cost' this is because the benefits that come from a cover crop are not just for one year. The increased organic matter in the soil will help improve the structure of the soil and also help with the pH. The increase of organic matter will attract more beneficial macro and micro-organisms to the soil which will improve the general health of the soil. The cover crops will also help retain more nitrogen over the winter that would have been leached down through the soils had the cover crop not been in place, this extra nitrogen will not show a huge impact in one year but a slight difference over a number of years.

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# HARVEST 2016 kicks off

*with yields hit considerably from last year*



Harvest 2016 has kicked off all over the country at this stage and the story is the same from every corner of the country. 'Yield is back' the phrase on the lips of every tillage farmer and contractor in the country. 20% is what most farmers and contractors are reporting. However, one farmer stated that his yield went from 4 tonne to 2.5 tonne in a continuous barley field, 'a drop too severe to stand' he said. The bad weather is the main cause of the yield drop. Winter crops went in in good conditions but then the rain started and forgot to stop. The timing of the rain couldn't have been any worse for some of the late sown winter crops as they faced the winter without having received any herbicide. The rain persisted throughout the winter which left a lot of

the crops under water for a prolonged period. Any crops that survived this period submerged in water suffered irreversible damage to their root systems. This damage to the roots meant that the plants' ability to take up nutrients was greatly reduced. As the bad weather kept coming any crops that hadn't got an herbicide before the winter was left waiting; This bad weather also meant that the first fertiliser application was delayed on all winter crops. All these circumstances had negative impact on the crops. If you compare a crop of barley to a young calf, if the calf doesn't get the best possible start in life it will never reach its full potential, the same can be said for crops and that is exactly what happened this year. The crops got off to a bad start with bad

**KEY POINT:** Some of the winter barley is coming in as low as 13.5% - well below what would be expected for this time of year.



weather and delayed fertilizer applications and they never caught up after that. Although any crops that survived the winter didn't suffer any serious amount of plant losses, the remaining plants didn't have the ability to reach their full potential after such a stressful winter. Report from the grain intake in New Inn in Co. Tipperary is showing that winter barley is busheling very poor at as low as 58kph with the highest being around 68kph. The moisture

is coming in very low which means the weight will not be in the barley. Some of the winter barley is coming in as low as 13.5% well below what would be expected for this time of year. Normal moisture for winter barley would be 20% which would greatly increase the weight and make the yield higher. The grain fill was very poor in a lot of the barley harvested already as the grains look small and shrivelled especially 6 row varieties.





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GLYPHOSATE AUTHORISATION EXTENDED

# Glyphosate AUTHORISATION

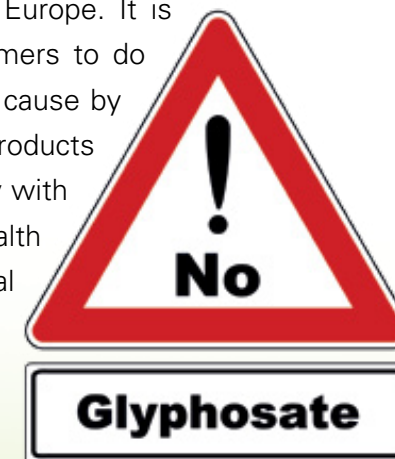
*extended to end of December 2018*

Back in June the E.U commission decided to extend the authorisation of glyphosate use for a further 18 months. This announcement was welcomed with open arms from all farmers across the E.U. Tillage farmers across Europe were stating that the removal of glyphosate approval without an alternative active ingredient with the same power to control economically important weeds would have a serious impact on the profitability and viability of tillage farming across Europe. If the E.U commission did not decide to renew its approval each member state would have to withdraw any product containing the ingredient from their recommended chemical lists, which would mean the end of products like Round-up and Rosate.

The cause of such debates has been the reports published about the possibility of glyphosate being a carcinogenic in humans. However out of the three most recent reports two have stated that there is no link between cancer in humans and glyphosate from exposure through the diet and one report

stated that there is a possibility of a chance that exposure to glyphosate in the diet can be linked to cancer in humans.

Although there are many contrasting reports about the safety of glyphosate for humans; one thing is certain that the future for glyphosate is very uncertain and if it is de-registered without a new active ingredient being developed to takes its place in could spell the end for tillage farming in Ireland or even Europe. It is now up to the farmers to do their bit to help its cause by using glyphosate products correctly and safely with both human health and environmental impact considered at all time.



**KEY POINT:** It is now up to farmers to do their bit to help its cause by using glyphosate products correctly and safely with both human health and environmental impact considered.





# Treated UREA

## CAN HELP REDUCE THE GREENHOUSE GASES FROM FERTILISER

A study carried out by Teagasc and Agri-Food and Biosciences Institute (AFBI) has shown that by making the switch from C.A.N to treated urea farmers can greatly reduce the amount of greenhouse gases coming from their farms as well as saving on fertiliser costs. The research has shown that greenhouse gas emissions can be reduced by up to 73% in grassland as well as reducing ammonium losses by up to 78.5%. This reduction in ammonium losses from urea makes it just as effective as C.A.N and also has the added bonus of being suitable for spreading in any type of weather unlike traditional C.A.N.

These trials were carried out by Teagasc in Moorepark Co. Cork on the grassland and similar results were observed in spring barley from further trials carried out by Teagasc in Johnstown Castle.

The positives that have risen from this research is that there is now high nitrogen fertiliser options available to farmers that will save them money, reduces atmospheric loss and reduce the carbon footprint of their farm.

This type of fertiliser technology will be a great asset to farmers in the future as the country tries to meet greenhouse gas emission target and food production targets by 2020.

**KEY POINT:** Research has shown that greenhouse gas emissions can be reduced by up to 73% in grassland as well as reducing ammonium losses by up to 78.5%.



# Straw

## AS A SOURCE OF ENERGY

Currently Ireland has around 300,000 hectares of cereal crops. This land is primarily located along the south and east of the country. The main product from arable crops is the cereal grains. This contributes to the crops yield and can generate premium prices on the international market. The by-product from cereal production is straw. Of the 300,000 hectares of crops, 1.1million tonnes of straw are left. Traditionally straw was used by farmers for animal bedding and fibre in animal feed. In recent years there hasn't been a strong demand for straw. Growers are opting to chop and plough the straw into the field. This acts as a carbon source for next year's crop. However, there is another alternative

potential market for the by-product. It could be used as a source of biomass.

### BIOMASS STRAW:

There is a potential for straw to be burnt and its energy be used to heat farm sheds and houses. If this idea is adapted, it could save farmers on heating costs and avail of the straws potential value. Ireland along with the European Union (EU) want 16% of total energy consumption to come from a renewable energy source by 2020. Straw biomass could be the key to achieving this goal while also overcoming the problem of volatile straw prices. Energy is measured in the biomasses Calorific value (Mj/Kg). Straw is aCO<sub>2</sub> neutral fuel and that is the reason why it can play a role in the energy supply. To get the most energy out of the straw the moisture content should be around 15%. Although it has been seen that moisture in straw is less corrosive to the boilers it's burnt in. However not as much energy is radiated from them.





## CALORIFIC VALUE OF STRAW AT 15% MOISTURE

TYPE	Calorific value (Mj/Kg)	Energy content (kWh)/tonnes	Heating oil Equivalent (L)	Ash content (Kg)/tonnes
Wheat straw	14.4	4,032	396	57
Barley straw	14.7	4,116	406	48
Rape straw	14.3	4,004	393	62
Meadow hay	14.3	4,004	393	71

### STRAW BOILERS:

There are a number of boilers developed which can handle the more complex chemistry of straw for combustion. Each boiler requires the straw be in either chaffed, pellet or whole bale form for combustion. Batch – fired boilers are available equipped with combustion air fans to control the air supply. This allows the user to control the speed and amount of heat the straw is combusted at.

