Trust in Tillage

SUPPORTING SUSTAINABLE FARMING

INSIDE THIS ISSUE

ISSUE 02 - FEBRUARY 2018

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WELCOME TO

Trust in Tillage

DAIRYGOLD'S
AGRONOMY BULLETIN

Dear Grower,

Welcome to our second edition of Trust in Tillage for our 2018 season. After a prolonged period of bad weather, crop walking has commenced to examine how crops have overwintered and to assess fertiliser requirements to encourage crops to start growing actively again. Most winter crops are now starting to show signs of hunger with yellowing seen across many fields as discussed by Liam Leahy later in this edition

As many of you learned at our recent tillage conference, Dairygold are offering a minimum contract price of €175/T @ 20% moisture for beans. This price coupled with the guaranteed protein payment from Europe makes beans a very attractive option for growers in 2018. More benefits of beans are summarised by Michael English. We have included the total recommended list to help our growers with variety selection this Spring and we will endeavour to supply the varieties that our growers require.

Our technical Tillage Team are available and willing to help you make decisions going forward, including varieties, rotations, varieties, cropping plans, fertiliser plans, spray programmes etc. We can advise on current market trends where required.

On behalf of our Tillage Team may I wish you all a successful growing season ahead and we hope to help you, our growers, wherever we can.

Yours sincerely

Nial Griffey

Nial Griffey B.Agi.Sc. I.A.S.I.S.

Tillage Technical Manager
Dairygold Agribusiness

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Dairygold Announces Minimum Contract Prices for Beans

at its Tillage Conference in the Corrin Event Centre Jan 30th 2018

At our recent tillage conference, Dairygold put forward a minimum contract price for beans of €175/T @ 20% moisture for 2018 Harvest.

The conference was well attended with over 250 growers in attendance. The overall theme of the conference was that there is a future in tillage but farmers have to extract all the potential from their farms and return the power to the land by proper management. There were four excellent speakers at the conference where Andy Doyle of IFJ discussed the future of the Tillage Grower, Tim O Donovan of Seedtech spoke on Beans and growing them for profit. Ciaran Collins of Teagasc gave timely advise on Malting Barley and Dr Louise McNamara of Teagasc presented findings about BYDV in the Munster area. You will find more information on their presentations further on in this addition and full presentations from the conference are available on our website

www.dairygoldagri.ie/news-events/publications/conference-presentations/

Pictures from the event are available on our website gallery www.dairygold.ie/news-events/media-gallery/

Speaking at the conference Irish Farmers Journal Editor Andy Doyle said this minimum price guarantee for beans is a welcome step towards enhancing growers' incomes. He also noted that Beans had multiple benefits in the wider farm crops rotation.

Dairygold Tillage Conference : Corrin Mart : Fermoy : Jan 30th 2018 : Ciaran Collins, Andy Doyle, Niall Griffey, Tim O'Donovan, Dr Louise McNamara

Advantages of beans to arable growers

Increased Profitability

As a stand-alone crop and with yields averaging 6.4 tonnes/ha over the last three years, Beans provide almost double the margin from spring cereal crops at €414 /ha. **Teagasc profit monitor 2018**

Provide a good break crop in rotations

Improving the yield and overall profitability of succeeding cereal crops.

Reduced Input Costs

The ability of Beans to fix nitrogen decreases nitrogen requirement in the following crops.

No additional equipment needed on farms

Beans fulfil the three crop rule requirements

Nial Griffey, Tillage Technical manager commented that Dairygold is fully committed to maximizing the use of native Irish cereals including Beans across its range of feedstuffs. The provision of knowledge sharing initiatives in conjunction with Teagasc along with the best advice and value inputs are also hallmarks of the co-operative actions on the ground.

The continued growth of Beans from 3,000 ha to 11,000 ha in recent years, according to Teagasc, has the potential to displace 1.2 million tonnes of imported protein feed. This should improve overall arable farm income and create a more sustainable arable landscape.

Trust in Tillage
In the Field 15/2/18

by Liam Leahy
Dairygold Tillage & Beef Area Manager
I.A.S.I.S.

After a prolonged wet period of weather there is now a clear sign that spring has finally arrived. While ground conditions are still slow to dry, there is a noticeable stretch in the evenings and that is starting to encourage a little growth despite the low soil temp (3-5 °c).

The winter sown crops that I visited over the last few days are a very mixed bag but considering the wet winter that they have experienced it fair to say that in general they have wintered well.

Winter Barley

Winter Barley is by far the biggest crop in the area. The early sown crops both in Kinsale and East Cork are at GS 24-26 and really starting to show signs of hunger with an increasing tinge of yellow across most fields. The later crops which have established very well when you consider the sowing date of some of them, are at GS 14 -22 and are starting to struggle now and there is plenty evidence of recent slug activity to compound concern. In both situations I think that's its crucial to get some Nitrogen or compound on to these crops immediately for different reasons. Get these crops moving now with view to enhancing tiller survival in 3 to 4 weeks' time with Plant Growth Regulators (PGR) where it's considered necessary. It's worth noting that PGR don't create tillers but can help to preserver them, its nitrogen that drives the growth and develops the tillers. This PGR application will fit nicely where you a using a 3 spray fungicide program which has now become the norm. Some of the crops haven't received any herbicide yet due to poor ground conditions. These will be sprayed as soon as one can travel as delaying it until later will only force growers to using tank mixes with several products included and running the risk of crop damage or sever checking. It would be wise also for growers to check all sprayed crops for any overwinter weeds that may

have come through including grass weeds. These grass weeds now need to be addressed where necessary. It is very important to get grasses properly identified and become proactive to them going forward as they can and will grow into a much bigger issue if left unattended. Our team is on hand to help if required.

Winter Wheat

While winter Wheat is a relatively small crop in the area it's looking particularly well. Again at mixed growth stage (GS) from 14-24 holding a reasonable color and showing little effects of the prolonged poor weather. Here again there is evidence of recent slug activity and crops should be monitored carefully for same.

Most of the Wheat crops are unsprayed but will be address as soon as the weather and ground obliges. These crops will be sprayed with a broad spectrum herbicide that will take care of all broad leaf weeds, wild oats and grass weeds including annual meadow grass plus brome and blackgrass where resistance isn't an issue. Again it's important to be able to recognize these grass weeds and create a plan going forward to deal with them both culturally, Chemically (where possible) and rotationally.

NPK compound will be applied to crops over the coming days. While it's not as necessary as it would be to the barley crops there is no reason for holding back much longer from Feb 20th.

Winter Oats

Winter Oats are looking very well but again a small crop in the area. They range from GS 14 to 23. It's worth noting that I haven't seen a crop of oats that have suffered any pest damage over the winter except for one late crop that crows literally ate every single seed in the field. Even if 30% of the plants had survived I would encourage the grower to leave the crop as Oats can compensate unbelievably even with low plant counts.

Again these crops in general will get an herbicide and its NPK fertilizer over the coming days as the time is here now to push them forward.

Oilseed Rape

Oilseed Rape crops are in general good with the exception of wet areas in headlands and heavy patches. It's a crop that hates heavy ground and while there are plants in most of these areas they simply won't grow until the ground dries out around them and the soil starts to heat up. Crops range from Green Area Index (GAI) 1 to 2 which is significantly behind last year but still in a good place as very well established and ready now to move on nicely. While Weed control is good, there are some volunteer cereals that will need addressing in crops that got Pre Emergence Herbicides. This can be completed anytime over the coming month and may well be included with a fungicide once the GS allow the chemical use. All crops with a GAI of 1.5 or below have started getting nitrogen over the last few days and all crops will be topped up again in early March.

It's important to get a trained eye to do an assessment on crop density to decide you total nitrogen requirements. This can vary from 150 to 240 Kg per hectare depending on the present development of the crop. It's planned to spray all these crops for Light Leaf Spot in early March as it can be a devastating disease and ones need to be proactive to it. Our tillage team would be happy to advise you on any queries you may have.

Beans

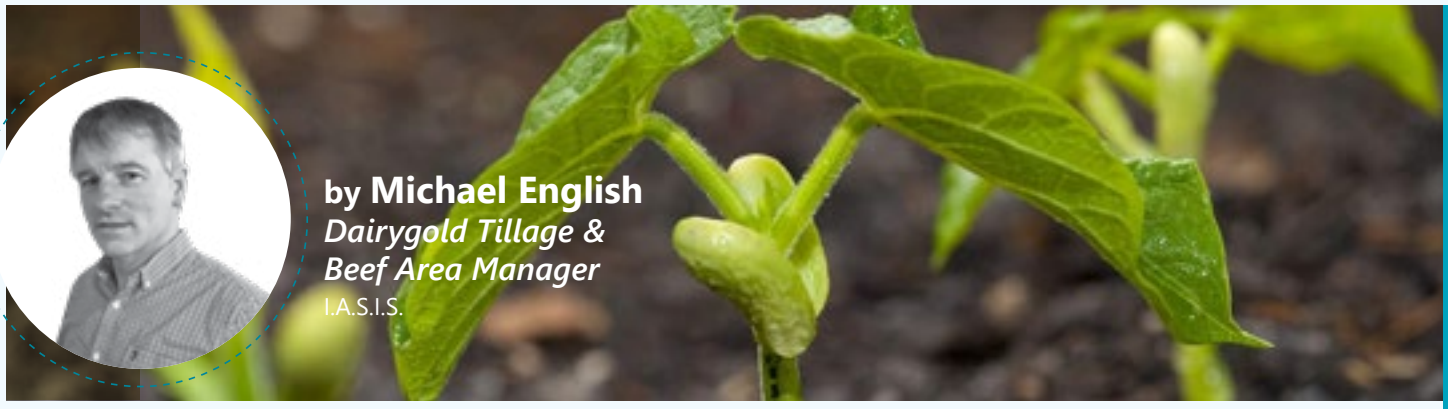
Over the last few weeks growers have been spraying off stubble ground and putting in place cropping plans for the coming season. Beans should be high on the agenda for growers as they are now guaranteed a protein support payment for the coming season and have proved to be a great break crop setting one for ideally for a following Winter Wheat crop. They are a crop that can be planted in very ordinary ground conditions and commonly sown with the "direct drill" system ; anytime from now on. This method is very successful once your underlying fertility and PH is good.

Forage Crops

There is also an increased interest in growing forage crops for livestock farmers for the coming season. While this can be both profitable and gives good crop rotation, it's imperative that you have an agreement with an end user.

Contact any member of our Dairygold tillage team or Inside Sales on 022-31644 if you are interested in growing forage crops for a livestock farmer this season.

Beans-the future and growing a quality crop



by Michael English
Dairygold Tillage & Beef Area Manager
I.A.S.I.S.

At our seminar in Fermoy, Tim O'Donovan from seedtech gave a paper of relative profitability of beans and why they should be considered for growing in 2018. Tim also gave advice on beans crop husbandry and how to grow a high producing crop.

Some of the Key Advantages of Beans

- Profitable
- Marketable : minimum contract price of €175/T with Dairygold
- Good for Soil : improves soil structure and encourages Nitrogen fixation
- Reliable: consistent yields

Here are are some of these points discussed in more detail

Profitable

	Beans	S. Barley
Yield (t/ac)	2.8	3.2
Price (€/ton)	175	150
Straw (€/ac)	0	60
Subsidy (€/ac)	100	0
Income (€/ac)	590	540
Costs (€/ac)	350	380
Margin (€/ac)	240	160

Marketable & Demand

- Proteins are extremely topical – why?

Demand is growing globally as emerging economies consume more meat – alternative protein production

GM free – debate on Kerrygold Butter. EU markets will require non GM protein in the coming years and we have an opportunity to fill this gap.

Environmental pressure to reduce inputs & CO2 emissions
- No N fertiliser required
- Beans offer a natural option to increase N levels in soils without purchased fertiliser.

Rotational benefits and nitrogen fixing capacity will assist with the sustainable farming agenda while also fulfilling the 3 crop rule.

What we want?

- 2.5 – 3.0 t/ac reliably
- Moistures 20%
- Pods 4” off the ground
- Clean stubble
- Minimal compaction
- Well established following crop of cereals

Soil & Fertility

- Medium to heavy soils are most suitable – moisture in the stem extension is of primary importance.
- A pH of 6.5 – 7 is ideal Beans will not yield in acid conditions
- Only P & K Fertiliser, no yield benefit from N
- P index linked to yield (PGRO/Teagasc)
- Aim for P index 3

Variety Choice

	Fanfare	Boxer	Lynx
Yield (100 = t/ha)	103	101	(107 &109)
Plant Height (cm)	146	140	144
%crude Protein (100 – 25.4%)	100	100	100
Chocolate Spot	6	5	7
Downy Mildew	9	6	7
Rust	7	4	4

Planting Beans

- Bird attack is a big threat
- Plant to a depth of 100mm – 125mm (4 – 5”)
- Less coulters or direct drills
- Direct drills – watch lime and P and stubble on top ground can reduce herbicides

Weeds

- Use glyphosate before sowing for perennial weeds and to lower the overall weed burden.
- Residual products work best on fine seedbeds with some moisture after spraying.

Options include:

- 4 L/ha Nirvana
- Basagran is the only option as a postemergence spray but is restricted to a narrow timing window.
- 3.5 L/ha Nirvana +1.7 L/ha Lingo or L/ha Centium
- 4.0 L/ha Defy + 2.5 L/ha
- Nirvana 3.0 L/ha Stallion (centium + Pendinemthalin)
  Graminicides like Falcon, Stratos Fusilade etc

Pests - Bean Weevil

A U – shape notch
B Always near ditch
C Treat if damage is
  - Across all field
  - Repeat 3 weeks later
D Normal aphid spray (Ninja)
  - Check labels + rate
  - Pyrethroid Chemistry

Disease Controls

Ascochyta

- Always seen in volunteers so remove!
- Seed born so use Certified seed
- All Seedtech Beans are DAFM certified free from Ascochyta
- Chemical contril is variable

Chocolate Spot

- Control Chocolate Spot at the first signs of infection (usually at start of flowering).
- Trails in UK would suggest a 2-spray program starting at flowering gives the best control
- Chlorothalonil 2 l/ha +/- 0.5 l/ha Amistar or Chlorothalonil 2 l/ha +/- 0.75 l/ha Folicur or Signum 0.5 kg/ha
- Check labels of Chlorothalonil

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Summary

Dairygold are offering a minimum contract price of 175/tonne at 20% moisture and with EU Protein payment, beans should be high on farmers list of priorities to grow in 2018, for more profit this year and a profitable higher yielding crop in the field the following year.

Effect of Plant Growth Regulators (PGR's)

by **Nial Griffey**
Dairygold B.Agr.Sc. I.A.S.I.S.

Plant growth regulators (PGR's) are synthetic hormones similar to the plants own growth hormone. They are used to measure the growth of the plant and are an important component for cereal production. They influence the growth and differential structure of the plants cell. The plants height and ultimate straw strength is controlled by hormones that naturally occur in the plant. Plant growth regulators can modify the hormonal system of the plant and beneficially effect its growth.

How Plant Growth Regulators (PGR's) work

The aim of synthetic PGR's is to target the plants hormonal system. This is done at the tillering stage. As soon as tillers form they begin to produce a substance called 'gibberellins'. This is like a nerve impulse in you and it triggers the stems to elongate and grow. PGR's are used at this stage and there aim is to prevent the process of 'gibberellins'. It encourages the plant to tiller out rather than grow tall. Idea is to produce more heads to increase crop yield.

Plant Growth regulator in Winter Wheat

- CeCeCe is the preferred product used in optimum conditions by Dairygold; however K2 is more ideal in cooler weather.
- Optimum timing for PGR application is during a period of growth. Splitting the CCC may help promotion and survival of tillers, first application should be at tillering and (approx. 0.75l/ha) and second at gs 30-31 (approx. 1.5 l/ha).

Winter Barley

- Apply CCC between gs 22-29, during a period of growth. Like winter wheat maximum results could be got by splitting application between tillering and early stem extension. Consult with your ASM about this as some products only allow for one application.
- Adjuvants can be included to help penetration in cold weather but K2 is another alternative.

Winter Oats

- Apply around gs 32-33

Winter Oilseed Rape

- To get the best results from the plant growth regulators apply at the green bud stage.

Natural biological hormones and regulators that effect the growth of plants:

Natural Plant Hormones	Produced in	Effects
Cytokinins	Roots, shoots	Stimulation of cell multiplication in roots and tillers
Gibberellins	Young tissues	Stimulation of the development of all plant organs, elongation and division of cells. Inhibition of root and shoot growth
Auxins	Top of plant	Stimulation of cell elongation especially in stems
Ethylene	Whole plant	Blockage of auxins contributing to cell walls thickening and maturation
Abscissic Acid	Grain, shoots, fruit	Inhibition of plant growth, ripening

Key Targets for Successful Maize Crop Yields

by Liam Cronin B.Agr.Sc

Rotation

Maize can be grown continuously in the same field. Continuous cropping with Maize can lead to an increased risk of fungal disease attack; with the correct spray programme this can be overcome.

Pre-sowing Preparation

A deep earthy fine and firm seedbed is required for a fast and uniform germination with the minimum number of passes in order to avoid compaction. If compaction is an issue then subsoiling in dry conditions will be required.

Target Feeding Value of Maize Silage	
Dry Matter %	30-35
Starch %	30-35
ME (MJ/kg)	12.0
NE (UFL/kg)	.88 - .93
NDF %	35-40
DMD %	75-80
Protein %	9-10
PDI (g/kg DM)	63

Sowing

Maize needs soil temperatures over 26°C in order to germinate.

- Sow between 15th April and 10th May for Maize grown without plastic
- Sow between 5th April to 5th May for crops grown under plastic

Soil Fertility

Maize needs a pH of between 6.0 and 7.0. A soil test should be carried out in order to determine your nutrient management requirements. Your Area Sales Manager will be available to offer advice on fertiliser applications.

Site Selection

The key factors when considering what variety to sow are:

1. Site Location
2. Maturity Rating

Site Location

Pick your site

Type of Site	Attributes of Site
Excellent	0-50m above sea level
	Free draining
	South Facing
	Sheltered
Good	50-75m above sea level
	Good soil conditions
	Southerly aspect
	Reasonable shelter
Marginal	75-100m above sea level
	Heavy ground
	Late sowing/early harvest
	Exposed site

In choosing a variety to suit a site, its agronomic profile should satisfy at least three attributes of the site type

Maturity Descriptor of Variety

Selection of Varieties (appropriate to a site type based on variety maturity)

Site Suitability	Late	Medium -Late	Medium	Early -Medium	Early
Excellent					
Good					
Marginal	X	X			

X maize variety not suitable for site

marginal variety suitability for site

somewhat suitable variety for site

highly suitable variety for site

Covered Varieties

Information sourced from DAFM recommended List 2018

Type	Yield of DM (t/ha)	Starch Content (%)	DM Content (%)	Comments
Controls	**18.7**	**23.6**	**36.0**	
LG30211	100	103	98	Good all-rounder + high starch
Feeditop	100	109	105	Early maturity and suitable for most sites
P8201	112	104	95	Suitable for early sowing on favourable sites
Award	100	102	104	Suitable on most sites
Spyci CS	102	105	101	NEW Variety-suitable for most sites. Slightly later than Award
Ambition	92	115	123	Early-Poor Site

Uncovered Varieties

Information sourced from DAFM recommended List 2018.

***other varieties available on request**

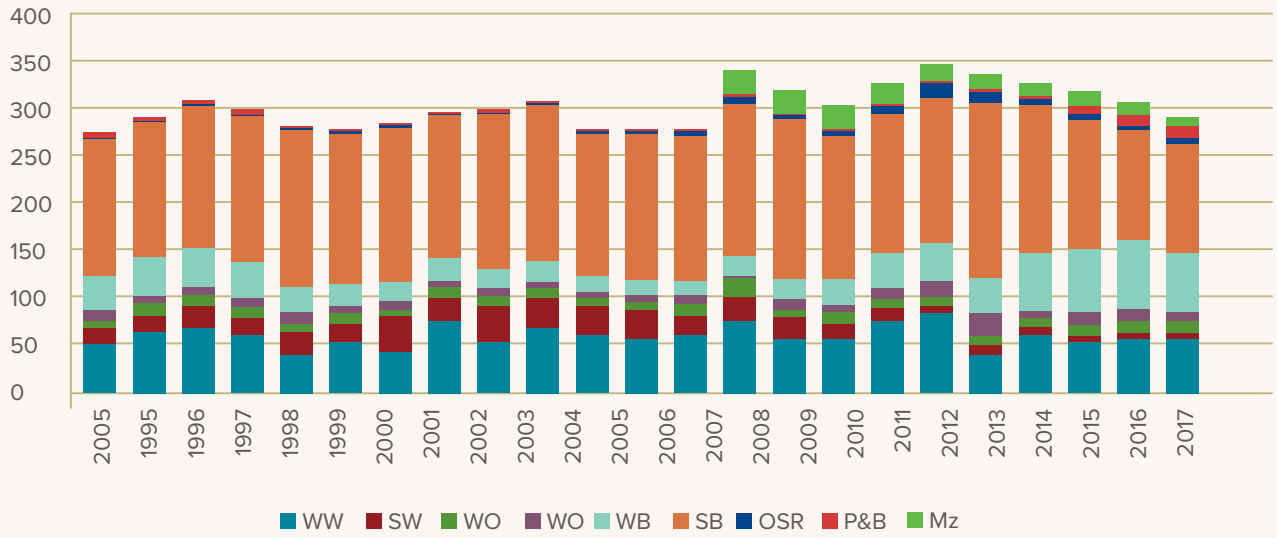
Do not sow uncovered maize on moderate or menial sites

Type	Yield of DM (t/ha)	DM Content (%)	Starch Content (%)	Maturity
Controls	**15.5t/ha**	**35.4**	**23.3**	
Ambition	105	106	113	Early
Severus	102	104	114	Early

The Future for TILLAGE

At our recent tillage conference in Fermoy Andy Doyle of IFJ delivered a paper on where he saw the future for Irish Agriculture. Andy's basic message is that yes we have to be positive and there is a future for tillage but for fewer numbers.

National Crop Area Trend ('000ha)



FARMERS JOURNAL

Cereal Production Trends

Ireland: 2.3 million tonnes
EU 28: 310 million tonnes
World: 2,100 million tonnes

0.1%

The need for increased output

- Yield potential is one of our new natural advantages
- Fill the yield gap - **the 10t club must target 15t/ha**
- The square meter challenge
- Help your land work harder for you 18.

We can see that Andy has set the bar very high, targeting 15t/ha. To achieve this we must use every sq metre wisely.

Challenges and Opportunities

Andy went on to note some of the challenges for the cereal grower. Challenges for the sector will revolve around legislative framework for pesticide use, CAP payments, climate change as well as restrictions around timing and rates of spray and fertiliser as well as the scale required to make a full living.

On the opportunities side Andy emphasized the importance of new varieties and putting power back into the found with improved fertility, soil structure improvements. He felt that many farmers could still make savings on machinery costs and felt precision farming technologies while useful are still a little away in providing real solutions to arable farmers.

Andy praise co-ops like Dairygold for making the effort to diversify their offering with increased demand for value added crops like malting barley and beans which add more profit to the bottom line.

Summary

For tillage growers, there is a future but we will have to exploit our yield potential. Andy encouraged growers to look at Beans this year where Dairygold are offering a minimum contract price of €175/T at 20% moisture.

Malting Barley 2018 (Protein 9.0-11.0%)

by Ciaran Collins
Teagasc

The following recommendations will give the best chance to achieve low to medium protein for the chosen variety. Even following all the recommendations may not result in achieving the required specification as seasonal weather variation and final yield has a large part to play in the final protein content. To ensure the best yields target soils with pH 6.5-7.0 and Soil Index 3 for P and K. Ensure enough P and K is applied to match index and crop off takes.

<table>
<tr><th>Parameter</th><th>Recommendations</th><th>Notes</th></tr>
<tr><td>Field history</td><td>Low-medium protein</td><td>Traditionally delivering low to medium protein barley</td></tr>
<tr><td>Preferred Rotation</td><td>Continuous tillage</td><td>It may be difficult to keep within protein limits when growing in year 1 or 2 after a long term ley</td></tr>
<tr><td>Soil type</td><td>All soil types</td><td>Medium to light textured soils are best.</td></tr>
<tr><td>Organic Manure</td><td>Can apply Organic Manure (OM) but keep applications to a modest level</td><td>Avoid heavy OM dressings as the N release from the OM can be uncertain from year to year</td></tr>
<tr><td>Sowing date</td><td>March - April</td><td>Early sowing is advised. Mid-March planting gives the best balance between yield and protein</td></tr>
<tr><td>Variety</td><td>Target ~350 seeds/m^2 to establish 300 plants/m^2

<table>
<tr><th>Variety</th><th>Av. T.G.W. (g)</th></tr>
<tr><td>(used for seed rate calculation)</td><td>Low-medium protein</td></tr>
<tr><td>Planet</td><td>51.9</td></tr>
<tr><td>Gangway</td><td>49.3</td></tr>
</table>

Note
Use TGW above as a guide but check TGW on the bag before you sow as there can be large variations</td><td>Seed Rates for 300 plants/m2 @ average T.G.W

<table>
<tr><th></th><th colspan="4">Kg/ha (st/ac)</th></tr>
<tr><td>Establishment/ Variety</td><td>70%</td><td>80%</td><td>85%</td><td>90%</td></tr>
<tr><td>Planet</td><td>222(14.2)</td><td>195 (12.4)</td><td>183 (11.7)</td><td>173 (11.0)</td></tr>
<tr><td>Gangway</td><td>211(13.5)</td><td>185 (11.8)</td><td>174 (11.1)</td><td>164 (10.5)</td></tr>
</table>

Notes on seeding rate
• Teagasc S. Barley Trials (2011-2013) recorded Av. establishment of 71%
• Allow for higher losses in poorer seedbeds</td></tr>
<tr><td>Nitrogen application</td><td>Nitrogen for index 1 (continuous tillage) on 7.5t/ha crop

<table>
<tr><th>Seedbed</th><th>Up tp mid tillering</th></tr>
<tr><td>45kg/ha (36 units)</td><td>110kg/ha (89 units)</td></tr>
</table>
</td><td>Proof of higher grain yields greater than 6.5t/ha is required for additional N (20kgN/ha per 1 tonne)

Consult your agronomist if growing brewing barley after grass, a break crop or organic manures as N rates may need to be adjusted

Apply all N before growth stage 30

Applying late nitrogen (liquid or solid) is not recommended</td></tr>
</table>

BYDV in Munster area

by **Matt Lawlee**
Beef & Tillage Area Manager
I.A.S.I.S.

At our recent tillage conference in Fermoy Dr.Louise McNamara gave a very informative paper on BYDV in Munster. In her paper she covered:

- Cereal Aphids & BYDV
- Kdr resistance
- Control Options for the future

Barley Yellow Dwarf Virus (BYDV)

Grain Aphid
(Sitobion Avenae)

Rose Grain Aphid
(Metopolophium Dirhodum)

Bird-Cherry Aphid
(Rhopalosiphum Padi)

MAV - Mild Strain

RPV

Grain Aphid & BYDV

- Sitobion Avenae (Grain Aphid)
- Reduces Grain Yield & Quality
- Transmits BYDV
- Kdr Confers partial pyrethroid resistance

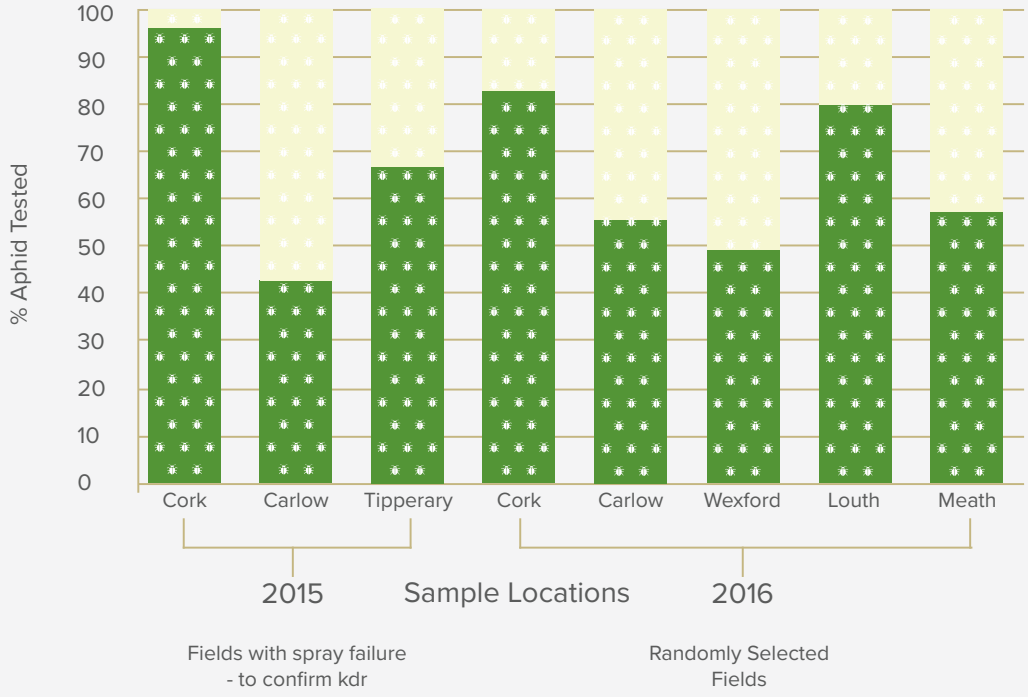
Yield loss due to BYDV	
Crop	Yeild Reduction
Winter Barley (Early September)	3.7 t/ha
Spring Barley (Late April)	1.99 t/ha
Winter Wheat	1.2 t/ha

> As we can see from this BYDV can cause large yield reductions and must be taken very seriously.

‘Knock Down Resistance’ or ‘kdr’ was first identified in the UK in 2012 and in Ireland 2013

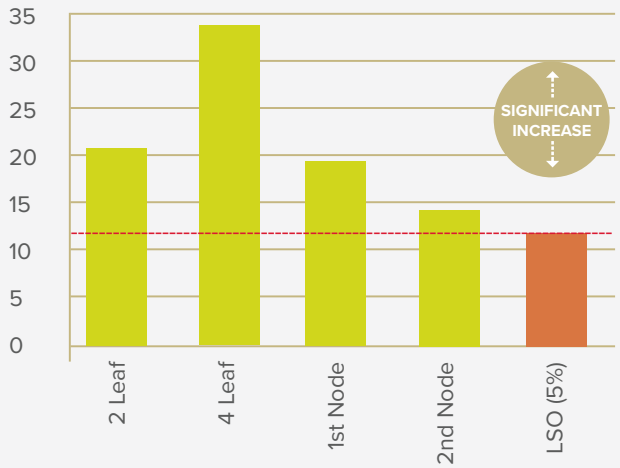
- Aphids with ‘kdr’ gene are less susceptible to pyrethroids
- To date, ‘kdr’ has only been identified in Sitobion Avenae’ (Grain Aphid), an important vector Barley Yellow Dwarfing Virus (BYDV)
- In UK & Ireland a single clone (SA3) is most often associated with the kdr mutation that confers partial pyrethroids resistance
- Research indicates aphids carrying the resistance gene occur in all major growing grain regions

kdr Incidence in Ireland



- kdr widely present in S. avenae populations across arable counties in Ireland
- kdr occurs in aphid populations on both barley crops and adjacent grass hosts

Spring Barley BYDV Control



The best response to yield coincided with spraying at the four leaf stage

Sown 26th April

G.S. Spraying	%BYDV	Yield t/ha
2 Leaf	17.2	5.1
4 Leaf	8.6	5.6
2 Leaf + 4 Leaf	8.0	5.5
4 Leaf + First Node	6.7	5.5
First Node	24.7	5.1
Second Node	27.5	4.8
G.S. 12 + 14 + 31	5.7	5.5
Untreated	36.4	4.3
LSO (5%)	5.986	0.506

Kennedy 2014

Spring BYDV Control

Crop	BYNV Risk*	Control Action
March Sown Spring Cereals	Very Low	Aphicide spray may not be necessary
April Sown Spring Cereals	Medium to High	Signal pyrethroid spray at G.S.14
Spring Barley (Late April)	Spring Barley (Late April)	Spring Barley (Late April)
		Seed Treatments not permitted in Spring

Spring Wheat and Oats

Normal sowing dates (pre-April).....Negligible risk
Jan & Feb sown.....No treatment needed
If sown in April.....Spray pyrethroid @ 3-4 leaf

> Message from this is if you sow in April you should spray with a pyrethroid

Looking Forward

Risk Factors	Challenges	Future Avenues
Early sown Autumn crops/late sown Spring crops	No Redigo deter?	Importance of cultural control
Mild Winter (Aphids overwintering)	Further resistance development	Alternative insecticides?
Mid Autumns (Aphid migration period lengthened)	Diminishing products - increased resistance	Biocontrol: Encouraging natural enemies
	Climate Change	Improved monitoring

> Louise also talked about the Establishment and Management of Ecological Focus Areas (EFA's) to enhance IPM and the opportunity for biological vectors to offer some cultural control.

Objectives of current Teagasc research on BYDV

- Assess how establishment & management of EFA's can be utilised within IPM
- Determine the impact of selected EFA's on crop yields
- Relate differences in yield to pest/disease levels in those areas
- Are pest/disease levels corrected with the EFA?
- Do EFA's encourage beneficial organisms and enhance natural pest control?
- Can management of EFA's be a tool in IPM programs?
- Determine arable farmers attitudes to measures to enhance ecosystem services

Methology

- **Experimental Margins** sown with a variety of treatments
- **Observational Margins** Existing GLAS margins will be monitored
- Margins monitored for vegetative composition and establishment
- Margins and adjacent crop monitored for pest and natural enemies to evaluate the margins impact on pest control
- Crop measured for yield and virus levels to assess the impact of arable margins on the adjacent crops

Summary of Louise McNamaras advice for BYDV control in cereals

Autumn Cereals		
Sowing Date	**BYNV Risk***	**Control Action**
Early Sown	High	Seed Treatment & Pyrethroid Aphicide in November or Aphicide at 2/3 leaf stage & 1st week in November
Sown in October	Medium to High	Seed treatment or Pyrethroid Aphicide 1st week in November
Emerging after November	Low	Control needed in mild Winters where aphids are plentiful or in risk areas

Spring Cereals		
Sowing Date	**BYNV Risk***	**Control Action**
March Sown	Low	Aphicide spray may not be necessary
April Sown	Medium to High	Pyrethroid Aphicide at 4 leaf
		Seed treatments **not permitted** for Spring sown cereals

> In summary aphids can cause serious yield loss and have to be controlled depending on sowing date and have to be controlled with the sowing date as the main deciding factor.

S33

33% N + 12%S

Grassland AGRO

S33 is a CCF
(Complex Compound Fertiliser)
Nitrogen Fertiliser with Extra Sulphur.

It is ideal for tillage and grass production use.

Features

- Nitrogen and Sulphur in every granule ensuring accurate and even spreading.
- Heavier granules enabling wider spreading.
- A more phased release of Nitrogen;
  :22.6% Carbamide (Urea) Nitrogen
  :10.4% Ammonium Nitrogen
  :12% water soluble Sulphur
- Suitable for cereals and grass all year round.

How S33 works

Ammonium Sulphate stabilises Urea thanks to a control of pH around the granule.

- In localised conditions pH>7.0: likely formation of NH3 gas: High risk of N losses.
- In localised conditions pH<6.5: likely formation of NH4 ion: low risk of losses.
- Ammonium Sulphate presence with Urea enhances the plant N efficiency.

Benefits of S33

- 2 forms of Nitrogen for increased absorption and assimilation.
- Decreased Nitrogen losses through Volatilisation.
- Reduced losses of Nitrogen through leaching.
- Better Nitrogen efficiency and uptake due to the presence of Sulphur.
- S33 brings costs down by reduced field runs and working times.

The Evidence

- Ammonium Sulphate (AS) is an acidic salt that is not prone to NH3 volatilisation in acidic and neutral soils. (Chien et al 2009).
- Mixing AS with Urea reduced NH3 volatilisation losses. (Lara Cabezas et al, 1992, 1997; Oenema and Velthof, 1993; Vitti et al, 2002).
- "The dry matter (DM) yield and apparent N recovery from the combined Urea/AS source was significantly higher than would be expected based on the proportions of each N source in a mixture", (Watson, Catherine, 1988)

Spring use of Roundup in Stubbles & for cover crop destruction

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Roundup

Spring Stubble Clean-Up

Cleaning up over wintered stubbles or cultivated land which has greened up provides a great opportunity to reduce weed pressure and give the foundation for the spring herbicide programme. First choose a quality product like Roundup PowerMax or Roundup Flex, which perform better than many other glyphosates by getting more glyphosate, more quickly into the target plants under the challenging conditions of early spring *. Then choose the appropriate rate for the weed spectrum and size and apply carefully to maximise coverage.

Variety Choice

Group	Comments...	Roundup PowerMax Dose rate kg/ha	Roundup Flex Dose rate L/ha
'Easy' annual broad-leaved weeds + annual grasses	Chickweed, Cleavers, Poppy, Fumitory, Pansy, Speedwells, Mayweeds etc	1	1.5
'Tough' Annual broad leaved weeds	Black bindweed, Knotgrass and other Polygonums, Small nettle. Up to 15cm >15 cm	 1 1.5	 1.5 2.25
Volunteer OSR	Use higher rate on well-established overwintered plants	1.5-2	(2.25-3
Scutch & other perennial grasses	Minimum of 10-15 cm of new growth Scutch population <75 shoots/m2 Scutch population >75 shoots/m2 and for other species	 1.5 2	 2.25 3

*Monsanto St Louis, Greenhouse trials 2007-2015

Cover Crop Destruction

There has been renewed interest in cover crops lately for several reasons: the introduction of Greening Ecological Focus Areas under the CAP, Environmental schemes like GLAS, catch cropping to reduce nutrient leaching into water and increased spring cropping. For scheme compliance, a minimum of two species, one each from rye/barley/oats and vetch/phacelia/mustard/lucerne/oil radish will usually be sown. Destruction in January/February can present problems for optimum Roundup performance.

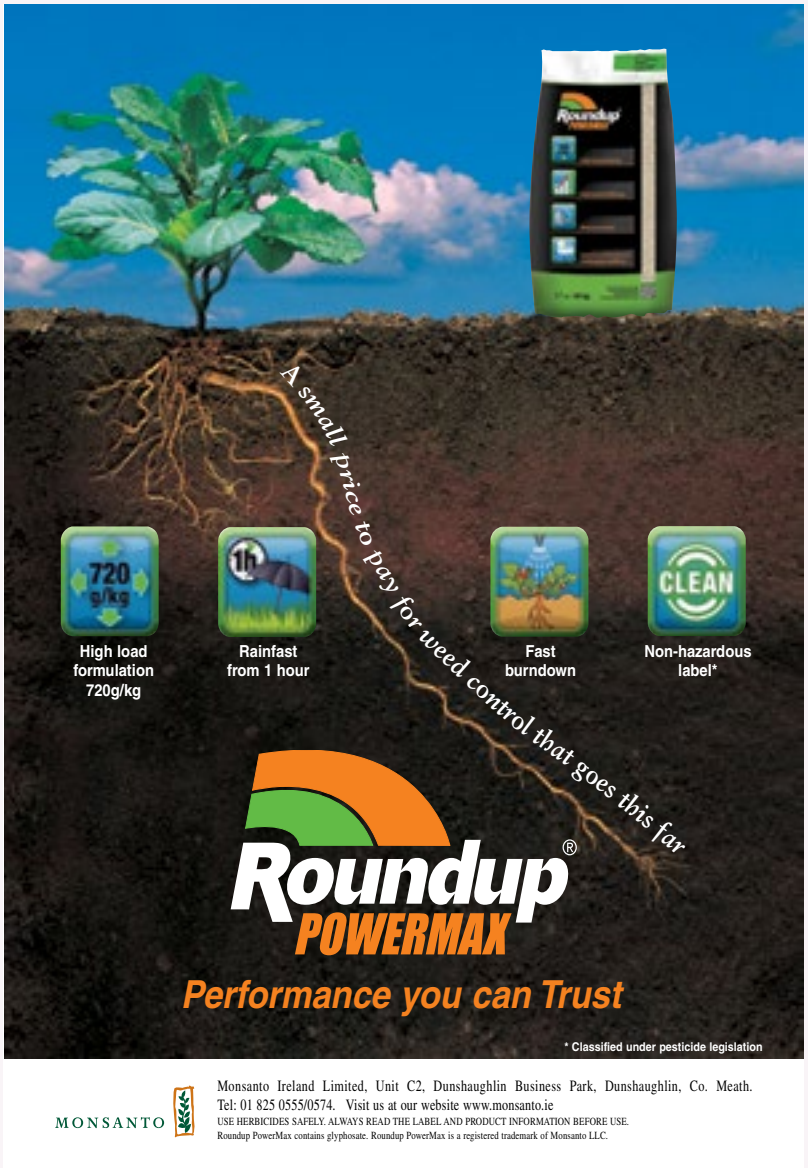
Though some will advocate ploughing down the green vegetation, most farmers will plan to kill off the vegetation with glyphosate to speed up and improve seedbed preparation for the following crop, reduce volunteers and minimise the carryover of diseases and pests like slugs and aphids.

Many will direct drill through the dead vegetation to preserve the improved soil structure from species like the large-rooted Oil radish, minimise soil disturbance and reduce costs. Using a low disturbance drill will minimise weed seed germination where good soil structure has been achieved by the cover crop. In this situation, it is vital to get the best kill possible by choosing a proven, reliable Roundup product applied at the right rate in optimum conditions

Cover Crop Rate Table

Cover crop	Dose rate Roundup Flex L/ha	Dose rate Roundup Powermax Kg/ha	Comments	Rainfree period Cultivation/planting interval
Cereals (Rye, Barley, Oats), other grasses	2.25	1.5	Relatively easy, but important to spray before stem extension	Modern Roundup products are rainfast in 1 hour on grasses and 4 hours for all broad-leaved species. In mild conditions cultivate the next day; if cold wait a day or two more to maximise uptake.
Phacelia	2.25	1.5	Relatively easy. Use higher rate for large plants.	
Mustard	2.25-3	1.5-2		
Vetch	3	2	Trials have shown these species to be difficult to control if established well. Follow-up cultivation should ensure effective control.	
Lucerne	3	2		
Oil Radish	2.25-3	1.5-2	Use lower dose for small rooted varieties. Large rooted tillage varieties will require the higher dose, especially in a mild spring. Hard frosts can reduce leaf area, so wait for re-growth where possible. Survivors will be controlled by routine in-crop herbicides	Modern Roundup products are rainfast in 4 hours on oil radish. In mild conditions cultivate the next day; if cold wait a day or two more to maximise uptake. Allow 2-3 days before cultivating varieties with large tap roots to ensure glyphosate gets into the root.

Cover crop destruction with Roundup Flex, (3L/ha, 56 days after application)



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Tel: 01 825 0555/0574. Visit us at our website www.monsanto.ie
USE HERBICIDES SAFELY. ALWAYS READ THE LABEL AND PRODUCT INFORMATION BEFORE USE.
Roundup PowerMax contains glyphosate. Roundup PowerMax is a registered trademark of Monsanto LLC.

Topical tips for early spring application of Roundup

Prevailing temperature will affect performance/speed of uptake and kill. Do not apply in frost or very cold conditions. Frosted plants need to be in as good condition as possible to maximise glyphosate uptake.

Symptoms may take up to 4 weeks to show in cold conditions. Apply in the morning rather than late afternoon to maximise uptake during short days.

Apply in a minimum of 100l/ha water and use a medium spray. Ensure good coverage by keeping speed down, using rear facing nozzles and increasing the volume to 200 litres in thick crops. Roundup Flex and Roundup PowerMax both incorporate drift reducing properties to minimises drift from taller crops.

Include Roundup Flex at 1l/ha or Roundup PowerMax at 0.75 kg/ha in with the pre-emergence spray where early germinating spring weeds or transplanted grass weeds are visible in the newly sown spring crop.

Recommended Lists 2018
Spring Cereal

Department of Agriculture, Food and the Marine

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This is the time of year when our farmer customers pick what spring varieties they will grow in 2018. Our Dairygold specialised Team will only be too happy to go through the list with our customers and pick the best varieties to suit each farmer. We pride ourselves in having the best varieties and for example this year we have Planet and Gangway for malting which are both at the top of the recommended list.

Spring Wheat 2018

AGRONOMIC & QUALITY CHARACTERISTICS*	RECOMMENDED	
	QUINTUS	RGT DOUBLESHOT
Relative Yield *	102	98
Straw Height (cm)	75.4	70.1
Strength of straw	5	5
Earliness of ripening	7	6
RESISTANCE TO:		
Mildew	3	5
Septoria spp.	6	6
Yellow rust	8	5
Sprouting	4	7
QUALITY		
Grain protein content (%)	11.1	11.5
Hagberg falling number	271	320
1000 grain weight (g)	49.4	44.5
Hectolitre weight (kg/hl)	75.8	77.0
Hardness index	Hard	Hard
Year first listed	**2015**	**2015**

* Based on trial results from 2015, 2016 and 2017. Yields are expressed as a percentage of Quintus and RGT Doubleshot (100 = 7.74 t/ha @ 15% moisture content). Based on results from 2016

Spring Oats 2018

AGRONOMIC & QUALITY CHARACTERISTICS*	RECOMMENDED			
	BARRA	BINARY	HUSKY	KEELY
Relative Yield *	94	109	106	108
Straw Height (cm)	107.7	105.0	105.0	106.9
Resistance to lodging	4	5	7	5
Straw breakdown	4	6	5	4
Earliness of ripening	6	6	8	7
RESISTANCE TO:				
Mildew	3	7	6	5
Crown rust	4	5	4	5
QUALITY				
1000 grain weight (g)	42.1	45.2	43.0	42.3
Kernel content (%)	74.5	74.7	73.8	73.8
Hectolitre weight (kg/hl)	57.4	55.1	55.7	56.3
Year first listed	**1985**	**2011**	**2009**	**2017**

* Based on trial results from 2015, 2016 and 2017. Yields are expressed as a percentage of the mean of Barra and Husky (100 = 7.74 t/ha @ 15% moisture).

Spring Barley 2018

AGRONOMIC & QUALITY CHARACTERISTICS*	RECOMMENDED					PROVISIONALLY RECOMMENDED		
	KWS IRINA	MICKLE	PAUSTIAN	PROPINO	RGT PLANET	GANGWAY	HACKER	LIMONA
Relative Yield *	103	100	101	100	105	106	102	102
Straw Height (cm)	72.9	69.1	74.7	77.8	76.1	76.9	74.6	76.9
Resistance to lodging	7	7	6	5	5	7	7	7
Straw breakdown	7	7	6	5	5	7	6	7
Earliness of ripening	6	7	5	6	5	5	7	7
RESISTANCE TO:								
Mildew	8	5	8	5	8	8	8	8
Rhynchosporium	6	7	7	6	7	7	7	7
Brown Rust	6	5	7	5	6	7	7	6
Net Blotch	8	4	6	4	5	8	7	8
QUALITY								
1,000 grain wt. (g)	51.5	51.2	51.3	53.6	52.9	50.8	50.2	49.5
Hectolitre wt. (kg/hl)	63.8	66.5	66.1	66.1	65.2	67.4	67.0	66.1
Screenings % (<2.2 mm)	2.2	1.4	2.0	1.0	1.8	1.3	1.5	2.5
Protein %	10.4	10.3	10.3	10.5	10.2	10.3	10.5	10.5
Year first listed	**2014**	**2013**	**2015**	**2011**	**2017**	**2018**	**2018**	**2018**

* Based on trial results from 2015, 2016 and 2017. Yields are expressed as a percentage of the mean of Propino and Mickle (100 = 8.24 t/ha @ 15% moisture content)

Malting Barley 2018 - Variety Information 2018

AGRONOMIC & QUALITY CHARACTERISTICS*	RECOMMENDED			
	LAUREATE	OLYMPUS	PROPINO	RGT PLANET
Relative Yield *	103	99	100	105
Straw Height (cm)	72.4	74.5	78.9	75.4
Resistance to lodging	4	5	5	5
Straw breakdown	4	3	5	5
Earliness of ripening	5	5	6	5
RESISTANCE TO:				
Mildew	8	8	6	8
Rhynchosporium	7	7	6	7
Brown Rust	7	7	5	6
Net Blotch	8	7	5	5
QUALITY				
1,000 grain wt. (g)	52.1	47.9	53.6	53.0
Hectolitre wt. (kg/hl)	64.4	64.1	66.8	65.7
Screenings % (<2.2 mm)	1.8	2.5	1.1	1.5
Protein %	10.5	10.6	10.9	10.3
Years in malting trial	**3**	**4**	**7**	**3**

Based on specific Malting Barley trial results from 2015, 2016 and 2017. Yields are expressed as a percentage of the mean of Propino and Mickle (100 = 8.15 t/ha @ 15% moisture content). Mickle is a control variety across all DAFM spring barley trials.

Dairygold Tillage Conference
Corrin Mart Fermoy 2018


Dairygold Tillage Conference


Dairygold Tillage Conference : George Mason, Jim Gibbons, Micheal Ryan, Paddy Harrington, Liam Leahy

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Dairygold Tillage Conference
Corrin Mart Fermoy Co. Cork

Photos from our resent conference in Corrin Mart on the 30th of January 2018.


Dairygold Tillage Conference : Richard Gallagher, Nigel O'Keeffe, Michael English


Dairygold Tillage Conference : Robyn Forrest, Edmond Barry, Philip O'Neill, Frank Hayes


Dairygold Tillage Conference : Tommy Predergast, Niall Griffey, Michael O Neill, Gary Predergast


Dairygold Tillage Conference : Dr Louise McNamara, Cairan Collins, Andy Doyle, Tim O'Donovan, Seamus O'Mahoney

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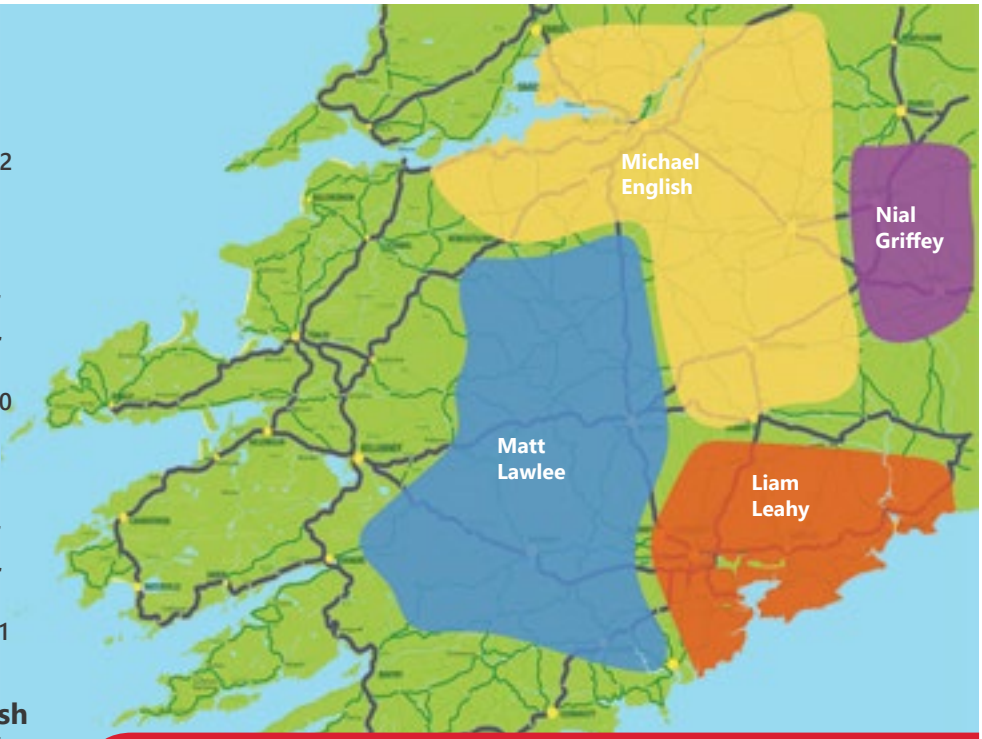

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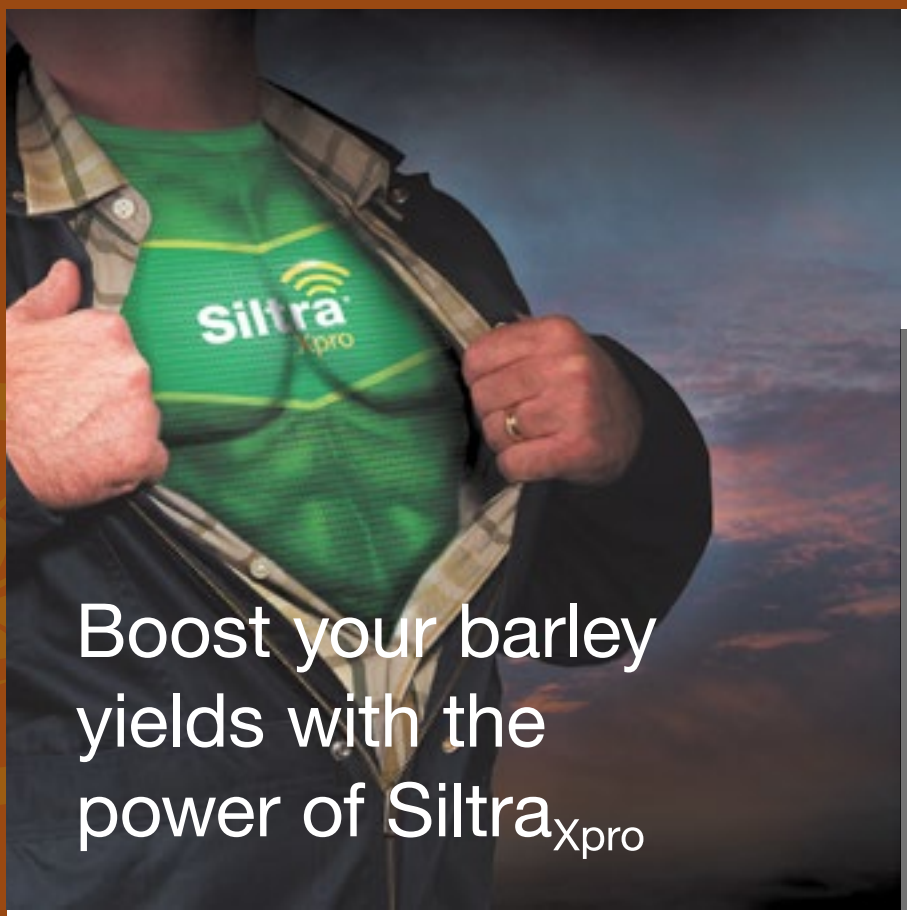

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