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Planning for change

I wish all our readers a Happy New Year. This promises, or threatens – depending on your perspective – to be a year of big decisions, both inside and outside the farmgate. Ireland's proposals in regard to the next CAP will be adjudicated on in Brussels in the coming months. The introduction of a national perspective to the CAP is positive from the viewpoint that one CAP does not fit all EU countries and farm systems. Having said that, much of what will be contained in the final package reflects a general policy theme which has been evolving for some time. The flattening of payments is in accord with the general inclination among politicians across the European Union towards 'fairness' and 'equality' for all European farmers – as far as that can be managed through the clumsy mechanisms chosen by those politicians and policymakers. It may have been utopian to expect that all payments be brought up to the same level, rather than down to the same level, but there is a general unwillingness by the European paymasters to increase the percentage of EU monies devoted to agriculture. As it is, because of the ongoing Convergence policy, many of our most viable farmers will suffer income reductions in the coming years that may well damage their long-term viability. After 2027, there is little doubt that a 100 per cent Convergence programme will be completed in every country in the Union, including Ireland. Likewise, the strong change in emphasis from food production supports to environmental supports, as evidenced by the development of eco-schemes, will continue. A doubling of the 25 per cent of Pillar One funding devoted to environment-related initiatives is very likely in the post-2027 CAP model. The policy being developed for European agriculture places food production in a secondary position to environmental protection. While producers may believe this will lead to food deficits within the EU, there seems to be little regard to this possibility among policy makers. As a major food exporter, the EU is some way off being in any way short of food but the implications of climate change, increasing restrictions on crop protectants, herbicides, soil nutrients and livestock health products, as well as an ongoing ban on genetically modified plants, mean that European consumers may become increasingly dependent on imported food in the future. Leaving aside any well-meaning proposals to ban food imports from regions that are environmentally fragile, the reality is that EU consumers will demand quality, quantity and diversity on their supermarket shelves and that demand will have to be satisfied, wherever the food comes from. The risk of increasing dependence on food imports mirrors current European dependence on energy imports, especially Russian gas imports.

Inside the farmgate, decisions rather that resolutions will be needed in 2022. A long-term plan must be put in place to ensure that all farmers qualify for the maximum eco-scheme payment. Fertiliser prices are so high now that usage cut-backs will be inevitable on most farms. That must be planned to have the least impact on profit and productivity. Neither can those fertiliser reductions be allowed to result in a fodder deficit developing this time next year. Those who make a career from criticising Irish agriculture have more than enough ammunition without providing them with another feed shortfall with which to beat us.

On a positive note, prices across beef, dairy, sheep and cereals are strong. They need to remain strong as we plan the long-term economic, environmental and social sustainability of our farm businesses.

AXA Tractor Guide 2022

Editor: Matt O'Keeffe **Editorial Director**: Miriam Atkins **Sheep Editor:** Gerry Murphy **Machinery**: Noel Dunne **Motoring**: Bernard Potter
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Chief Executive: Rebecca Markey **Printing:** W&G Baird **Publishers**: IFP Media Subscription: €40 per annum
Irish Farmers Monthly, Castlecourt, Glenageary, Co. Dublin.
Tel: +353 1 7096900 • e-mail: miriamatkins@ifpmedia.com • www.irishfarmersmonthly.com

Glanbia shareholders endorse buy-out proposal

Just before the end of 2021 Glanbia Coop shareholders gave a firm endorsement to the proposal to buy-out the remaining Irish milk processing assets co-owned with Glanbia Plc. The 4,000 voting shareholders supported the various resolutions by an 80:20 majority. This marks the end of the Plc's thirty-three-year direct interaction with Irish milk and grain producers, even as it continues to be a valuable buyer of many of GII's products, especially its whey stream. While the Coop's shareholding in the Plc could drop to 20 per cent or even 17 per cent in the coming period, that percentage still represents a valuable asset and should provide a regular dividend pay-out for the Coop. The Coop board and management's attentions will now turn to concluding the transaction which includes a spin-out for shareholders, the establishment of a €150 million investment fund, as well as the purchase of the remaining 40 per cent of the GII processing facilities. Much of the pre-vote debate among Coop shareholders centred on the expertise available to manage the investment fund as well as seeking a firm commitment to pay a leading milk price. Jim Bergin, CEO of the Coop, committed to paying 'the best possible milk price', not falling into the Kerry trap of committing to pay 'the leading milk price', which caused no end of controversy between Kerry Group and its milk suppliers.

Damien riding high on the airwaves

The European Network of Agricultural Journalists held a forum, Agriculture on the Frontpage, in the European Parliament to mark their 10th anniversary last month. The keynote speaker was the EU Commissioner for Agriculture, Janusz Wojciechowski. There was also a panel discussion chaired by Damien O' Reilly with Colm Markey, member of the European Parliament, Diana Lenzi, CEJA president, and Thomas A Friedrich, a German journalist.

The ENAJ comprises of national organisations of journalists across 22 European countries. It was founded in 2011, with the support of the EU Commission. Damien O'Reilly was elected Vice President of the organisation at its recent AGM. His profile is high in RTE, having hosted several of the primetime radio programmes this year.

It was interesting to scrutinise the latest JNLR radio figures, which were released in December. While The Brendan O' Connor show, Morning Ireland and Liveline lost listeners, Countrywide, presented by O'Reilly is in 12th place or mid table, with 241,000 listeners, ahead of Drivetime and The Ray D'Arcy Show. Damien's Saturday morning programme, sponsored by the IFJ, is serving farmers very well, helping to dispel a range of urban myths about rural Ireland through its wide listenership. Another interesting fact from the JNLR is that 82 per cent of the Irish population tune into radio every day, which translates into weekday figures of 3.1 million listeners.

How not to win friends

If ever there was a political own goal, Green Party MEP Ciarán Cuffe scored it in his letter to Irish banks discouraging them from lending to young farmers. He was, of course, trying to save them from themselves through borrowing to invest in their farm businesses. Presumably he has identified a collapse in prices and food consumption around the corner and was sharing his enlightenment. He may well be correct, just as those who foresaw the collapse of house prices in the run-up to the economic collapse were right, eventually. Right or wrong, and time will tell, the urban-based MEP made no friends among the farming community, though that sector of the electorate might not be a political priority for him. Conspiracy theorists may believe that it was another effort to stymy or even reverse the dairy expansion of recent years which has provided viable farm career opportunities for many aspiring young farmers and farm families in recent years. What the Dublin MEP seemed to miss is the fact that much of the current investment by farmers, young and old, is in improving the environmental credentials of their farms. Increased manure storage, the purchase of LESS equipment, fencing off watercourses and other infrastructural improvements, should, we assume, be welcomed by Ciarán Cuffe and his colleagues in the Green Party.

CORRECTION: FTMTA Machinery Show to be held in Summer 2022

In the December edition of *Irish Farmers Monthly* we commented on a proposed two-day Summer Farm Machinery Show to be held by FTMTA next year in Punchestown.
In the commentary there was an inadvertent date reference regarding the event being held in May 2022. We can clarify that FTMTA Executive Director Michael Farrelly made no reference to a specific date for the event. The only reference to a timeline, which was stated in an FTMTA press release, was the Summer of 2022. To avoid any further confusion, we would like to correct this and confirm that the show is planned for Summer 2022. Further details regarding specific dates will be announced by the FTMTA in due course.

Concept dairy

Another day, another App. Irish agriculture is particularly well served with any number of useful Apps. The latest to gain our attention is Concept Dairy. This innovation seeks to allow dairy farmers to forward sell their milk at a time and price of their choosing. As anyone involved in hedging product knows, you may not hit the highest price, but you will usually avoid the lowest ones too. While hedging is a normal business practice, it is only in recent years, particularly due to the innovative role taken by Glanbia, that it has gained widespread appeal for milk producers. International dairy markets are on a high right now, so many Glanbia producers who locked in a proportion of their milk volume at a fixed price twelve months ago are losing out but that's the swings and roundabouts of hedging – ask any grain producer who seeks to manage his income through forward selling. Meanwhile, the Concept Dairy App developers, led by former energy trader and Ornua Risk Manager Diarmuid McColgáin, are determined to give farmers the option of having more control over their product prices. The App provides information on current international dairy prices, potential buyers and the means to engage in securing a fixed price for a set period. The intention is to roll it out across other commodities in due course.

Protein priority

A doubling of production of protein crops over the next eight years is an ambitious target for the country. This is the strategic plan of Teagasc, which, through its Irish Protein Stakeholders Group, is supporting the devotion of up to 20,000 hectares of tillage land to growing protein crops by 2030. If realised, that should, in turn, produce 130,000 tonnes of protein feed for use in the Irish livestock feed market. Protein crop production is financially supported through EU schemes and if the Teagasc-driven plan succeeds, it would see thousands of tonnes of imported protein being displaced by indigenous product. Much of the current importation is in the form of soya and sourced from crops grown from GM soy-plant varieties and there is an increasing insistence from European food buyers for minimal or no GM material in the products they buy. Whether GM crops are safe or not seems to be irrelevant as science is increasingly trumped by sentiment among consumers. Field bean production is currently the most viable option for protein production in the Irish climate and while there are challenges to increasing its incorporation in some livestock feeds, it is an economically viable crop to grow and Irish tillage farmers are becoming increasingly adept at managing the crop to best effect.

Extreme weather patterns cause moderate to high mycotoxin risk

The 2021 Alltech European Harvest Analysis uncovers the true threat mycotoxins pose to animals and producers. For this year's analysis, Alltech is collaborating for the first time with SGS, a world leader in mycotoxin testing services. Combining these resources with findings provided by the Alltech 37+® mycotoxin analytical services laboratory, this year's analysis offers the most comprehensive insights yet. Survey data has been collected for key feed ingredients on a regional level, and analysis is indicating the presence of moderate to high levels of mycotoxin risk.

The results of this analysis are based on 1,194 samples of barley, wheat, corn, corn silage, grass silage, alfalfa haylage, triticale, straw and whole crop silage (wheat and barley). These samples are collected from farms or animal feed production sites across Europe (Russia, Spain, Denmark, Hungary, Romania, Germany, Netherlands, United Kingdom, Ireland, Bulgaria, Czech Republic, Republic of Lithuania, Latvia, Greece, Belarus, Croatia, Serbia, Slovakia, Ukraine) and offer a representative picture of the contamination risk in all regions, with an overall moderate to high risk. Across all samples, there was an average of 4.34 mycotoxins detected, with 98.5 per cent containing at least one mycotoxin and 86.1 per cent containing two or more mycotoxins. Type B-trichothecenes were found in 87 per cent of the grain samples, a similar number to last year. The highest concentration of deoxynivalenol (10,914 ppb) was detected in a Danish straw sample. Out of over 600 corn samples analysed, 24 per cent of these contained aflatoxins, a notably higher percentage than 2020 and something feed and livestock producers should be aware of when putting mycotoxin control plans in place for the coming season. Of the corn samples analysed using an LC-MS/MS method, fusaric acid was the most prominent mycotoxin, detected in 96.7 per cent of samples, while type B-trichothecenes and fumonisins were found in 90 per cent and 83 per cent of samples, respectively. For more on the results visit www.irishfarmersmonthly.com

Final Preparations For Calving 2022

Maeve Regan,
Head of Ruminant Nutrition, Agritech

As we fast approach the onset of calving, it is important to have an organised plan in place to achieve a successful calf rearing programme.

The management of replacement heifer calves in the first weeks of life will have a significant impact on lifetime production and long-term profitability of the dairy herd they are about to join.

Heifer rearing accounts for up to 20% of expenses on a dairy farm. Typical costs of rearing heifers to 24 months are estimated at €1,500/head. Therefore, a 100-cow herd with a 20% replacement rate is about to start a long-term investment process, costing approximately €30,000 over the next number of weeks.

To reach lifetime targets, replacement heifers must achieve an average weight gain of approximately 0.75 – 0.8 kg/day from birth. In the more short-term, the aim will be to double the calf's birthweight by weaning at 8-10 weeks of age. Interruptions to performance at any point will offset such target weights being achieved.

Calf Rearing Checklist:

1. Provide the calf with sufficient levels of high quality, clean colostrum within the first three hours of life.
2. Introduce starter concentrates from at least three days of age to encourage rumen development.
3. Always offer clean water ad lib to calves. Milk is a feed, not a drink.
4. Offer a clean long-fibre forage (ideally straw) to increase rumen function and entice dry matter intakes.
5. Provide calves with a high quality, high dairy content milk replacer on a consistent basis (accurately weighed and mixed, using sterile utensils, mixed and fed at the correct temperature).
6. Facilities need to be clean, well ventilated, draught free and well bedded. A calf spends approximately 80% of its time lying down so provide a deep, warm, dry bed.
7. Ensure everyone involved in the calf rearing process have a full understanding of key procedures such as colostrum management, feeding requirements, hygiene practices, etc.

For more information on preparing for the upcoming calving period, contact your local Agritech Sales Advisor or visit www.agritech.ie.

InTouch

Calves: The building blocks for the future

Cathal Bohane, InTouch Nutrition

Cows drying off on many farms over the last few weeks has given farmers a chance to recharge the batteries. Dark evenings and mornings are now slowly becoming a thing of the past. While a lot of uncertainty and high input prices loom, overall, 2021 has been a particularly good year. Good prices, growth and production levels and a great back end from a weather perspective have carried us into 2022 in good order, where more opportunity awaits us. January and February bring with them the arrival of new calves on many farms, and, like all arrivals on our farm, we need to be prepared. Investment now will give you a slow rate of return, but this very same investment will pay dividends in two years' time.

As per previous articles, having the dry cow in good body condition and a good calving are key to getting a healthy calf. A lot is also written about the importance of colostrum to the calf in the first few hours of life, helping it build immunity and fight off any sickness, thus keeping fatalities below 3% in the first 30 days. How do you make sure your calves are getting colostrum and what volume are they getting are crucial questions to ask. Research shows that a calf that has received four litres of colostrum versus two litres will produce an extra 500 kg of milk in the first two lactations and have a 16% increased survival rate to the second lactation. Getting the heifer to this period will allow you to cover the cost of heifer production and, from then on, you are making margin.

Beyond the initial days of life, it is about building the calf up onto the correct milk intake based on the gain required versus the environment that the calf is in. Achieving 600–800 g of gain per day requires 750–900 g of milk replacer per day. This works out at six litres at 12.5% inclusion or 15% inclusion for the larger gain. This is for an environment of approximately 15°C, and if the temperature drops to 0°C, it will raise the energy requirements by a further 50%. Getting this extra gain will not only make milestones easier to reach but will also give you a return once they calf. For every 100 g of extra daily gain pre-weaning, the heifer will give 150–155 kg extra milk in her first lactation.

For successful calf rearing, we must focus on the key areas:

1. Colostrum
2. Early nutrition
3. Environment
4. Rumen development and immunity

Outside of colostrum/milk feeding, early nutrition should also focus on the concentrated calf mix to allow good rumen development. While starch will develop this rumen, the use of chopped straw in this mix can also develop rumen strength and allow this concentrate to be fed throughout the early, weaning and grazing phases of this animal, keeping them healthy and avoiding the scours and 'check' caused by changes in calf diets.

Finally, InTouch would like to wish everyone a happy, peaceful and productive new year.

IFA and Bord Gáis Energy Launch New Solar Energy Pilot

Poultry farmer Robert McBride oversees the installation on his farm in Co. Monaghan

IFA and Bord Gáis Energy have launched a comprehensive solar pilot for farmers. The project, which has been in development for over a year, reached a key milestone this week with the successful installation and commissioning of two farms.

Martin Stapleton, Chairman of IFA Member Services said: "IFA and Bord Gáis Energy have invested a significant amount of time in this project. For rooftop solar on farms to be adopted in large numbers, farmers will require a capital grant of up to 60 per cent to achieve a reasonable payback. To ensure that there is successful adoption of solar, it must be clear that it does not take from any existing capital grants open to farmers".

At the launch, James Kelly, IFA's Director of Organisation said: "This important partnership with Bord Gáis Energy will see solar energy installations on up to 15 farms, across a number of sectors and regions. The purpose of this pilot is to establish what works commercially and the challenges that create barriers to implementation. The farming community want to play an active part in the green agenda, and this is a very real demonstration of this commitment which also reduces cost inputs for farmers as well as helping Government deliver on the 2030 carbon reduction targets".

Colin Bebbington, Director of Energy, Marketing and Data at Bord Gáis Energy said: "Bord Gáis Energy is committed to contributing to a net zero economy and helping our customers transition affordably to a lower carbon future. We have a longstanding relationship with the IFA and we're proud to be working together on this initiative which will drive solar energy generation on farms, helping farmers to lower their carbon footprint which leads to long term sustainable farming."

Ornua appoints Aidan O'Driscoll to Board

Irish dairy cooperative, Ornua, has announced the appointment of Aidan O'Driscoll as Independent Non-Executive Director to the Board of Ornua. Mr O'Driscoll will join the Board after the 2022 Annual General Meeting scheduled in June.

Commenting on the appointment, Chairman of Ornua, Denis Cregan said: "On behalf of Ornua I would like to warmly welcome Aidan to the Board. Aidan brings over 40 years of extensive and wide-ranging national and international agri-food trade, economics, policy, and leadership experience to Ornua, and joins at an exciting time as the business continues to deliver on its ambitious growth strategy across our 110 global markets. The Board and the Executive team look forward to benefiting from Aidan's wealth of experience when he joins the Board in June 2022."

Aidan has extensive experience of the agri-food sector and of national, EU and international affairs, economics and policy having served in a variety of posts in the Department of Agriculture, Food and the Marine. Within the Department, he served as Chief Economist from 1995 to 2001 and Assistant Secretary for Finance, EU Affairs, Economics and Climate Change from 2001 to 2015. He was appointed Secretary General in 2015. He subsequently moved to the Department of Justice and Equality, to take up the role of Secretary General in that Department. He is currently Chairing the Commission on the Defence Forces. Aidan has also worked with Irish Aid, was Chairman of the Committee on World Food Security, served in the Irish Embassy in Rome and with the Food & Agriculture Organisation of the United Nations.

Production cost surge in 2022

Matt O'Keeffe reports on the increasing costs that farmers are facing and the latest forecast on price inflation from Teagasc

Rampant cost inflation threatens to completely erode the income gains experienced by farmers last year. Fertiliser price increases are only the most visible aspect of the operating cost shock currently being experienced by farm businesses across all enterprises with energy costs in general and gas prices, in particular, placing a hugely increased production cost burden on the agricultural sector. Lest anyone be in doubt, the enterprise summary in the Teagasc Outlook published in December confirms the impact, highlighting fertiliser prices increasing by 120 per cent with fertiliser volumes declining by as much as 20 per cent. Farm-gate fuel prices are expected to increase by between 12 per cent and 20 per cent with increased electricity prices also impacting on production costs.

Sector by sector

The Teagasc Report confirmed that cattle enterprises will suffer feed price increases of 10 per cent, pasture and forage cost increases of up to 33 per cent and electricity and fuel cost increases of 12 per cent. Overall, cattle production costs are expected to surge by an average 12 per cent this year. Cattle rearing margins are predicted to suffer a reduction of 22 per cent in 2022 with finishing margins down by 10 per cent for the year.

There should be relative production price stability with a marginal decrease in EU production matched by a similarly small decrease in consumption, and meat imports subdued by high shipping costs. Meanwhile, consumer prices for beef are running at record levels in USA, China, France and elsewhere.

Sheep margins, are expected to fall by an average 15 per cent for mid-season lamb production, impacted by production cost increases, including pasture and forage cost increases of 70 per cent.

Input spend on cereal farms will increase this year. Fuel costs alone are expected to be up 18 per cent. With direct costs up substantially and an anticipated drop in yields, net margins per hectare can be assumed to be down on

cereal farms in 2022.
Irish dairy output was up by 6 per cent in 2021 with a further 2 per cent increase expected this year. Producer prices are also expected to hold up reasonably well in the first months of 2022. That's where the good news ends for dairy. The concentrate bill on dairy farms is calculated to increase by an average 14 per cent. Pasture and forage costs will be up 38 per cent on last year. Electricity and fuel increases averaging 14 per cent will further impact on dairy margins in 2022. The most severe cost pressure will be from a 120 per cent increase in fertiliser prices with supply deficits adding to the challenges faced by producers. Teagasc is assuming a 15 per cent usage reduction on foot of this price increase. The full impact on productivity cannot to be fully analysed at this stage. It may result in a forage deficit at years end. The average cost per litre is reckoned to hit 30 cents in 2022 resulting in a net margin reduction on dairy farms of 22 per cent.

IFAC analysis

John Donohue, CEO of IFAC, the farm accounts cooperative, sums up 2021: "It was an exceptional year for farming, weatherwise and from an economic aspect. Output prices were good and input costs were reasonably stable. That statement is in the context of margins on cattle farms remaining low despite greatly improved prices at marts and factories. The strongest sector was dairy which delivered good profit levels on the back of firm and improving dairy markets and ongoing output growth at more modest levels than previously."
"For 2022 we are seeing production cost increases and that will suppress margins somewhat, but the outlook for output prices is positive for at least the early months. That's why IFAC sees 2022 as being potentially good for farming, bar unforeseen circumstances. That does depend on where energy, fertiliser and other input costs go in the coming period. But, unless we get really bad weather, we expect 2022 to be a reasonable year for farming and comparing it to 2021 is difficult because last year was a really good one for most farmers. If the year pans out as we expect in terms of increased costs and margin decreases, with good output then there will still be decent profit to be made."

Managing increased costs

Production costs will have to be well managed, John emphasises: "What we are saying to our clients is 'get a budget in place, make sure what your spending will be'. For bigger investments don't just finance them from cashflow without fully planning them financially. Match the funding requirement to the length of use in the case of a tractor, for instance. Just because there are surplus funds in the account doesn't mean it should be spent short-term on what is a long-term investment.
Would John recommend forward buying, of fertiliser, for instance? "We did a series of end-of-year reviews with clients in 2021. On that basis, some farmers did forward buy a proportion of their 2022 fertiliser and other input requirements, though not as much as in previous years. People are hedging their bets in the hope that fertiliser prices will come down somewhat during 2022. Supply is likely to be an additional issue this year and we are also seeing a tightening of credit with merchants as we head into 2022. Our general advice is to act as usual with some forward buying but not to get carried away."

Beef profit threshold

The IFAC chief concurs that cattle prices are only approaching the price threshold they need to be at: "In order to make any cattle enterprise profitable, prices need to be at least where they are. Another thirty or forty cents per kilo is what is really needed to deliver decent profit across the different cattle enterprises. Obviously, the new CAP will have a big impact in terms of income on all farms, especially drystock farms, because they have always been so reliant on those direct payments. Mind you, if we had foretold last year's cattle prices at the start of 2021, most farmers wouldn't have thought our predictions were achievable. So, prices delivered but margins, as always, were tight."

Farm-gate fuel prices are expected to increase by between 12 per cent and 20 per cent with increased electricity prices also impacting on production costs.

Financial developments

John Donohue notes that many farmers took the opportunity last year to increase their pension contributions, showing "they are planning for the future, not least of which, is long-term planning for succession."
Farm incorporation is becoming increasingly popular as John confirms: "We are now servicing thousands of farms that have gone down this route. We believe it is a great way to build wealth and a great way to manage tax liabilities. Increasingly, people are finding incorporation as being a good way of providing for the future. One difficulty we do see in some cases is where people transfer into companies and become company directors, but do not change their behaviour. They still act as though they are sole traders except with a different name on the cheque book. There are certain disciplines and requirements associated with a company structure and being a company director that have to be obeyed. We have a corporate governance team in place to assist in advising clients in that regard. We see very little downside to the structure and any profitable business probably should consider the option. There is more administration, but the benefits far outweigh that."

Latest news from UCD School of Agriculture and Food Science

New Scholarship programme for MSc in Agricultural Extension and Innovation students

Grainne Aherne; Jack Kennedy; Eimear Tobin and Thea Broderick

UCD, Ireland's Global University, and FDC Group have announced details of a new annual scholarship programme available to students enrolled on the MSc in Agricultural Extension and Innovation programme at one of UCD's top performing schools; the UCD School of Agriculture and Food Science. The scholarships valued at €50,000 euro per annum were awarded, following competition, to four students enrolled on the MSc in Agricultural Extension and Innovation programme. This year's recipients are Thea Broderick (Limerick), Grainne Aherne (Limerick), Eimear Tobin (Meath) and Jack Kennedy (Kilkenny). The scholarships valued at €12,500 per student will be paid as a stipend to support living costs and the successful scholars will also have an opportunity to complete the placement and research component of their programme with the FDC Group.
Commenting on the new scholarship programme and collaboration with FDC Group, UCD Dean of Agriculture and Head of the School of Agriculture and Food Science, Professor Frank Monahan said: "The FDC Group scholarship programme will make a significant contribution to students enrolled on our flagship MSc in Agricultural Extension and Innovation programme annually and highlights the recognition and continued demand for highly sought after UCD School of Agriculture and Food Science graduates."

International Innovator Fellowship awarded

Róisín O'Sullivan, who is undertaking a PhD with the UCD School of Agriculture, has been awarded the inaugural International Innovator Fellowship. Róisín is originally from County Kilkenny and her research focuses on the authentication of milk and dairy ingredients using stable isotope ratio analysis. The Fellowship programme will provide Róisín with an opportunity for experiential learning in food-ag-health-tech and an immersive VC opportunity. This experience will develop the business potential of strong research programmes, in readiness for transitioning ideas out of the lab and into the marketplace. As part of this Fellowship, Róisín will travel to the Innovation Institute for Food and Health (IIFH) in University of California, Davis (UC Davis) for six months' study and placement.

UCD leading or partner in 16 out of 24 projects in €20m DAFM call

Minister for Agriculture, Food and the Marine (DAFM), Charlie McConalogue, TD, and Minister of State Martin Heydon, TD, recently announced awards of €20 million in funding for 24 research projects arising from the Department of Agriculture, Food and the Marine's Competitive Research Call 2021. Two of the projects led by UCD support the All-Island Food Integrity Initiative, Food-I, to deliver food production systems that produce food that is safe, nutritious and authentic, produced in ethical and sustainable ways that protect the environment and all those who work in the agriculture and food sectors. Protein-I will take a food-systems approach to enhancing the sustainability of protein production across the island of Ireland. Led by the UCD Institute of Food and Health's Professor Lorraine Brennan, UCD School of Agriculture and Food Science, and Professor Fiona Doohan, UCD School of Biology and Environmental Science, the project will focus on plant production through to human health, paying particular attention to the development of Ireland's rural bio-economy. Mycotox-I will ensure the safety and quality of grain produce on the island of Ireland. Led by Professor Fiona Doohan, the project will select the most critical control points for monitoring and controlling mycotoxin contamination of grain and milled product.

Best practice winter finishing

Kilkenny family make impressive winter-finishing system work, writes **Niall Claffey**.

Farming in the parish of Urlingford, in north Kilkenny, Sean Power – and sons Eamon and Donal – work with approximately 170ha of both owned and leased land. The home farm, passed down through generations to Sean, is home to a heifer-finishing system and a sheep flock. And, as we walked through the farmyard, one could not but be impressed with the beef enterprise. The Powers operate a store-to-beef operation and strive to finish heifers all-year-round, both off grass during the grazing season and out of the shed during the winter period, with 570 heifers passing through the system in 2020 – prior to BEAM reduction requirements.

Winter finishing

"We stick to heifers due to their finishing ability and their ease of handling. Our land is spread across four different locations, and we normally batch animals according to their weight and type on those farms," Sean explains.

"When recently purchased heifers are added to those batches, they mix easily and there's no danger of them fighting or getting hurt."

Winter finishers have had their struggles in recent years, with many farmers up and down the country moving to alternative systems of production. A high level of efficiency and animal performance are required, along with the farmer having a control on costs.

For Sean, it starts with the right heifer, and this is a task that he has no problem taking responsibility for. During pre-Covid days, Sean would be found around the ring in local marts. However, since March 2020, Sean has been purchasing most of his heifers online – without travelling to the mart at all.

"I wouldn't say I took to it like a duck to water, but we had no choice. Once Eamon gets me up and going on the laptop, I can work away," he says. "I have a system now; I don't purchase heifers in any large batches and go by the price per kilo, date of birth and the test date.

"The breed doesn't bother me; once she's a R-grader or maybe back to an O+, and one that will thrive when we get her home to the farm," he adds.

It's quite obvious that Sean has a keen eye for quality cattle, with the sheds consisting of uniform-weighted animals of different colour and breeds. Heifers arriving onto the farm are given 24 hours to climatise to the new environment before the herd health plan is implemented consisting of an IBR, clostridial vaccine, and pour-on for parasitic burdens.

Diet formulation and feeding

While Sean takes the reins for the purchasing side, Eamon – a civil engineer by trade – looks after the formulation of diets, feeding and herding. He returned full-time to the farm over a decade ago and has played a pivotal role alongside his brother, Donal, who helps out at weekends and during the summer months.

Eamon is currently feeding three TMRs: a store, a grower and the finishing mix. The 'build up' ration contains mostly silage, with small quantities of bread, oaten feed, brewers' grain and meal. The finishing diet consists of: 8-10kg of silage; 13kg of a bread, oaten feed and brewers' grain mix; and 3kg of meal.

"We take great care when building animals up onto the finishing diet; that's the important part. It's a real fine balancing act between feeding them enough or going too far," Eamon says. "If we get that wrong, it can set us back.

"We keep a firm eye on the dung patches in the pens and how quickly they get up to feed in the mornings; that can tell you a lot," he adds, with animals checked both morning and evening.

As you can see from the finishing diet, Eamon does not overdo it when incorporating silage. The main reasons being quality reliability and cost, both of cutting and of growing. This is a cost that is set to drastically increase next year when current fertiliser prices are taken into the consideration.

"Feeding silage can be inconsistent; it all depends on the growing season, the quantity you need, the contractor and the harvesting time - which can have a drastic effect on quality and whether that goes right or wrong for you. We now finish heifers during the winter on ingredients that are more consistent," he says.

Sean and Eamon are currently drafting fit animals for slaughter, with more destined for slaughter in the coming weeks. Annual average carcass weights are generally coming into 340kg – earlier-maturing breeds may be at 285-295kg deadweight, while continental would be up around 360kg.

"We take great care when building animals up onto the finishing diet; that's the important part. It's a real fine balancing act between feeding them enough or going too far."

Learning curve

The Powers are past participants of the Teagasc BETTER Farm Beef Programme – making many adjustments during the years they were involved.

The most notable changes came in the form of stocking rate and grassland management and investment was made in introducing more paddocks onto the farms. This, in turn, allowed them to carry more groups of animals and feed better-quality grass – resulting in better performance during the grazing season. The fact sheep are present on the holding also allowed Sean and Eamon manage grass easier.

Since the programme concluded, Sean has increased numbers, carcass weights and the quality of the heifers again – always maintaining a high level of efficiency and keeping a close eye on costs.

It's hard not to be impressed by what have been achieved on the Kilkenny farm. Money was strategically invested in areas that would return it – and not in areas that would erode it.

Recently, the Powers have invested in new cattle handling facilities to make life easier around the yard given the numbers that are present, with room for a weighing crate to measure performance in the future. In addition to this, Sean plans to invest in some technology to help with paperwork and Bord Bia audits.

While a lot of hard work and long hours have been stacked up over the years, Sean says: "The journey has been a complete learning curve and we're still learning and we still have a lot to get right."

FBD YOUNG FARMER OF THE YEAR

2021

In association with
Macra na Feirme

Owen Ashton, a farm manager from County Cork, was recently crowned the 2021 FBD Young Farmer of the Year.

A graduate in Agriculture from Aberystwyth University in Wales, Owen manages a dairy herd of 180 cows in Castlelyons, County Cork. Over the last number of years, Owen has developed the farm and focused on environmental sustainability.

Owen was one of many Macra na Feirme members to be recognised for their achievements in their industry at the awards ceremony which was broadcast on Macra na Feirme's Facebook page. The awards, now in their 23rd year, are sponsored by FBD Insurance and supported by Macra na Feirme in association with the IFA and the National Rural Network.

Front Row L-R: Shane Halpin, Owen Ashton, Edward Treanor Back Row L-R: Trevor Cobbe, Eoin Kennedy, John Keane President Macra na Feirme, Michael Berkery Chairman FBD Trust, Eanna Tiernan

The evening also saw various category winners awarded:

- Trevor Cobbe from Laois won the Dairy award
- Eoin Kennedy from Kilkenny won the Land Mobility award
- Éanna Tiernan from Roscommon won the Dry Stock award
- Shane Halpin from Dublin won the Other Enterprises award
- Owen Ashton from Cork won the Career Farm Manager award
- Edward Treanor from Monaghan was a finalist in the competition.
- Éanna Tiernan was announced winner of the NRN Biodiversity Award sponsored by the National Rural Network.

Owen Ashton

Chairman of FBD Trust Michael Berkery said: "On behalf of everybody at FBD, I would like to extend our congratulations to Owen Ashton. This award is very well deserved, it is a testament to Owen's hard work, passion and dedication. Our hope is that these awards will inspire the next generation of farmers to build strong and sustainable farm businesses for the future".
Macra na Feirme National President John Keane said: "Every year we recognise the very best in Irish young farmers. This year is no different and our finalist and all those who have competed in this years FBD Young Farmer of the Year showcase the best farmers across the globe, who are Irish young progressive farmers. It is a true testament to the competition and those competing that our young farmers set the standard for agriculture in terms of sustainability and ambition".
IFA President Tim Cullinan said the calibre of contestants in this year's FBD Young Farmer of the Year competition, organised by Macra na Feirme, was of a very high standard. "With all the changes and challenges ahead, the sector will need bright, innovative and resilient people to drive farming forward. I wish all those who took part the very best for the future."
The aim of the competition is to recognise and reward the top young farmers in the country. Entrants are judged according to a number of criteria including farm business initiative and innovation, levels of farm efficiency and enterprise quality, farm safety and environmental protection awareness, as well as agricultural knowledge and community involvement.

Signpost farmer profile

Matt O'Keeffe chats to farmer Francis Nolan and Teagasc advisor Michael Fitzgerald about the work underway on a Signpost farm

Francis Nolan is milking 150 cows on a 70-hectare, elevated farm, on the edge of the Castlecomer Plateau. The land, which rises to almost 800 feet is made up of shale-type soil and capable of high grass yields when managed well. This is clearly something Francis is doing, with well in excess of 12 tonnes of grass DM per hectare produced last year.

As a demonstration farm for the Teagasc Signpost Programme the Nolan farm is an ideal example of what can be achieved on more challenging soils and locations.

Planning ahead

Francis has his grazing plan in place for 2022: "The hope is to have cows at grass either part or fulltime from early February as conditions allow. We are flexible and we will only graze when we don't damage the sward."

Wintering infrastructure on the Nolan farm includes a large cubicle shed, the original part built back in the 1970s by Francis's late father Michael. There was a further addition in 2001 and the final set of cubicles were installed in 2020. This was originally a drystock farm with a 100-cow suckler herd up until 2013 when Francis converted to dairy.

Pioneering swards

Tetraploids are not normally associated with heavier soils. However, as Teagasc advisor Michael Fitzgerald points out, good management can overcome difficulties: "Francis renewed some paddocks with tetraploid grasses in 2020 because of benefits to grazing out and higher grass yields. They are more open and prone to poaching but with good management they have a lot to offer."

A parlour was built in 2013 and Francis bought the base of the herd from two farmers: "They had good performance and we have built on that since. The herd is British Friesian/Holstein cross with an EBI of €153. Milk sub-index is €38 (3 star) and we have a Fertility sub index of €77 (5 star). We work off EBI for AI breeding using a team of high EBI bulls. Fertility and milk sub-index are the primary EBI targets followed by percentage milk solids and maintenance figures. We sold 490 kgs of milk solids per cow in 2020 and we should exceed 500 kgs sold for 2021. Protein was 3.63 per cent in 2020 with butterfat averaging 4.7 per cent. With finished for now we can concentrate on improving the herd further through careful breeding."

Francis is using a selective dry cow regime to minimise

Michael Fitzgerald, Teagasc, and Francis Nolan, Signpost farmer.

unnecessary antibiotic use: "No cow under 70,000 SCC gets a dry cow tube." Calving starts around the 25th of January and 82 per cent of the herd is due to calve in the following six weeks. In 2020 less than ten per cent of the herd was scanned as not in calf. 2020 was the first year using all AI and it certainly has not impacted adversely on the numbers and percentages of cows in calf. The cows have Allflex collars and that has helped with heat observation. Francis: "The collars reduce labour and time spent on heat observation as well as helping to identify health issues and cows not eating. The collars also provide information on lameness, if a cow is moving slowly or not eating as she should. The cows are being monitored every hour of the day so that's much more than we can do."

Grazing flexibility

Francis has a flexible approach to grazing: "It's weather and soil dependent. We go out in February if conditions are right and we are out full or part time, again depending on conditions. Nothing is set in stone as we want to get as much grass into the cows as possible with as little sward or soil damage as possible. We are equally flexible in the Autumn. In 2021 the cows were still grazing to the end of November. The previous year we were in at night a month earlier."

A Keenan feeder has been a feature of the farm for two decades: "We find it useful. We keep the feeding simple with freshly calved cows getting some concentrates in the parlour and the rest through the feeder with forage. We do use straw in the dry cow feed and that helps us keep them in the right body condition." First cut silage was taken in the last week of May in 2020 with a DMD of 74.

A worthy participant

Michael Fitzgerald endorses Francis as a Signpost participant: "He shows what can be done on more difficult soils. He is a relatively new entrant, so he readily adopts

best practice in cow and farm management. He has made rapid progress in grass production and management, breeding and labour efficiency. In addition, the Nolan farm is strong on environmental actions. Almost 10 per cent of the farm is devoted to natural habitats including regular tree planting, allied to eighteen kilometres of hedgerows. All waterways are fenced off providing further habitats for flora and fauna on the farm. PV solar panels, in place since 2019, provide a supply of hot water to the milking parlour."

Soil fertility

There is a regular reseeding programme incorporating clover. There is ongoing soil fertility testing and currently soil fertility tests show 13 per cent of the farm is at Index 1 for P, 23 per cent at Index 2, 44 per cent at Index 3 and the remaining 20 per cent at Index 4. K levels run from 9 per cent at Index 1, 20 per cent at Index 2, 22 per cent at Index 3 and the remaining 50 per cent of the farm is at Index 4. Michael Fitzgerald estimates that up to 250 tonnes of lime are required to reach optimum pH. The Nolan farm is in the Nitrogen Derogation Programme and usage of nitrogen in 2020 was 190 kgs per hectare: "Francis uses a contractor umbilical slurry spreading service with most of the slurry spread in Springtime to maximise the benefit in improving soil fertility and promoting grass growth through the peak growing period. Usually all of the farm gets slurry by early May. There is sufficient slurry storage for up to 24 weeks even though the farm is in Zone A and can spread slurry from mid-January."

Managing cows, grass and labour

Farm roadways were restructured in 2020 to minimise walking for cows and provide multiple access points to paddocks, especially useful in the shoulder grazing periods. The restructuring also eliminated any roadways passing close to watercourses.

As well as Francis, labour on the farm includes a local drystock farmer who works on the farm four mornings each week. Both Francis's mother Kathleen and wife Anne also help out, particularly at busy periods. A monitor is another labour-saving asset during calving. There is a robotic Lely scraper system which eliminates another task during the winter period. Automated cow drafting using the electronic collars also reduces labour input. The 20-unit Dairymaster parlour with automatic cluster removers and dump-lines ensures milking is completed by one person in under one and a half hours.

With a young family of nine-year-old Michael, seven-year-old Rachel and three-year-old Shane, lifestyle is important for Francis: "I try to be finished by six pm most evenings. I am involved in under-age football training so that's a priority. The hope is to have as much time as possible for family."

A John Deere career

Matt O'Keeffe caught up with Galway-born Brian D'Arcy just before Christmas to chat all things machinery.

Brian works with John Deere as Director and Division Sales Manager for the UK and Ireland. His main responsibilities are overall sales for the island of Ireland, all of Scotland and Wales, and from the Midlands, or Nottingham, where JD headquarters is, for the North of England. Brian covers all the dealers and customers in those regions for sales of John Deere agriculture equipment.

Brian outlined his career progression within John Deere: "I started in July 2007 as a demonstrator for large tractors, so that was basically going out with dealers and customers demonstrating our 8000 and 9000 series tractors. Then I was promoted to Crop System Specialist looking after Southern England for combines, sprayers and crop care. My next role was Territory Manager for Wales and West Midlands for Ag products, which was a really enjoyable job as I was out every day with dealers and customers, talking to them about our products and the value we can bring

to our customers. I did that for five years before making a big change from the Ag side to the golf and turf side of John Deere, when I was promoted to Strategic Account Manager for golf and turf equipment, covering all of the UK. It was a really enjoyable job and completely different to Ag, a great experience. I got to travel the world trying to convert customers over to John Deere for about four and a half years. After that, in October 2018, I moved to our European headquarters in Mannheim, Germany, where I was small tractor product-line Marketing Manager for Region Two, effectively, from the west coast of Ireland to the eastern boundary of Russia. I was in charge of product marketing for the One to Five series, compact and utility tractors. I did that for a year and then was promoted to Division Sales Manager for golf and turf for UK, Ireland, Benelux and the Nordic countries of Iceland, Finland, Sweden, and Denmark, which brought me to November of last year and a move back to the UK to my current position as Division Sales Manager and Director for Ag equipment for UK and Ireland."

The Tralee experience

This remarkable career progress was built on an initial degree in Mechanical Engineering Brian undertook at Tralee IT: "I grew up on a dairy farm in the West of Ireland. I always liked farming and farm machinery and particularly the business side of agriculture. I came across a course in Tralee IT, now Munster Technological University, in Agricultural Engineering. Initially I gained a certificate and then a diploma. At the time, there wasn't a degree course so I took a couple of years out and went traveling in America and I did the cotton and grain harvests in Australia for a year. When I came back to Ireland a degree course in for Bachelor of Science in Agricultural Engineering was available in Tralee and I went back to college. I did my experience year working with a manufacturer and then I did my final year with the college. It was an absolutely brilliant experience in a brilliant college, with fantastic lecturers and what I really liked about it was the one-on-one experience with lecturers such as Brendan O'Donnell and his colleagues and I would say it was Tralee that really solidified my love for Ag business in general and gave me a really good head-start and a good grounding."

Endless opportunity

"Using John Deere as my obvious example, there are endless opportunities in the ag and the turf side of the business, any amount of different positions and roles. A lot of people don't really understand the brilliant opportunities that are out there. To be fair, when you join John Deere, if you want to and have the ambition, they can send you to the moon. It's not just in marketing and sales, it's in customer support, it's in aftermarket, it's in HR, it's in precision guidance. It could be in forestry, in turf, in golf, in construction, in road building equipment. There are opportunities all over the place, not just with John Deere. If I look at our John Deere dealer network across Ireland and the UK, and the state-of-the-art equipment and facilities that those dealerships have, the kind of technology that the technicians, the apprentices and those people are working on, it all requires a lot of intelligent, ambitious, driven people to work. No two days are the same. You could be one day in the workshop, it could be out visiting customers, you could be another day demonstrating a brand new 8RX or X9 combine. Every day is different and that's what I really like about it."

Attracting talent

The John Deere executive recognises that there is a challenge for the sector to attract motivated and talented people: "I'm not sure what the problem is, if I'm honest, because the opportunities are there and when we get people in, they love it. The turnover of staff is very, very low. I think the biggest challenge, not just for us, but for all manufacturers is getting their names out there and educating the kids in Secondary Schools about the career opportunities that are available. It is a challenge because we've got more opportunities than we can fill at the moment. To get the calibre of candidates we want to apply for jobs, not just for John Deere, but for dealers across the UK and Ireland is a real challenge."

A recruitment strategy

Brian agrees that not enough is being done by machinery companies and their ancillary networks of dealers and service providers to promote those career opportunities: "I'd like to see us talking to kids in Junior Cert and Fifth Year. Just going around making sure they understand the opportunities that are out there, the positions that are available, and highlighting the opportunities available. I think we miss a trick in the sense that we chase the students after the horses have bolted. We need to get ahead of the curve and talk to them before they've made their mind up about what they want to do in terms of looking at other career opportunities before they look at ours. I would like to do a road trip around Ireland and the UK and explain what we can bring to the table, what opportunities are out there and drive some momentum."

Farm machinery fascination

It is clear that Brian is totally enthused by the technologies employed in farm machinery: " I would say the probably the biggest, disruptive innovation of all is precision farming, the next generation of smart agricultural technology equipment is out there on its own. Unparalleled, if you look at the combination of equipment, technology, services, and what we do with data, and how we manage that. Having data is one thing, but how we execute and use the data to drive productivity, profitability, and sustainability on farms is really important. And I would say we have a lot of exciting technology that we can bring to the market. If you look at our operation centre, if you look at our suite of products, when it comes to precision guidance, we are in a in a good place, but we need good people to execute on that strategy and deliver it across to our customers right across Ireland. And that's where these opportunities are going to come in the future."

Promoting eggshell quality

Paula McCooey, Poultry Manager, Alltech Ireland, discusses the current pressures evident for the laying industry and outlines key factors influencing eggshell quality.

The laying industry currently faces unique challenges. Prices are volatile, yet consumer demand is high. Producers must work hard to produce the best possible eggs while also finding alternative ways to improve margins in these challenging times. While reducing costs is not easy and feed prices remain high, one means of improving margins is to improve bird productivity.

The industry aims to extend the laying period up to 100 weeks to produce 500 eggs per hen in a single cycle. Extending lay while maintaining egg production and eggshell quality is a major challenge for the industry. However, this can be achieved through genetic selection programmes and adequate nutrition of the hens during the laying period.

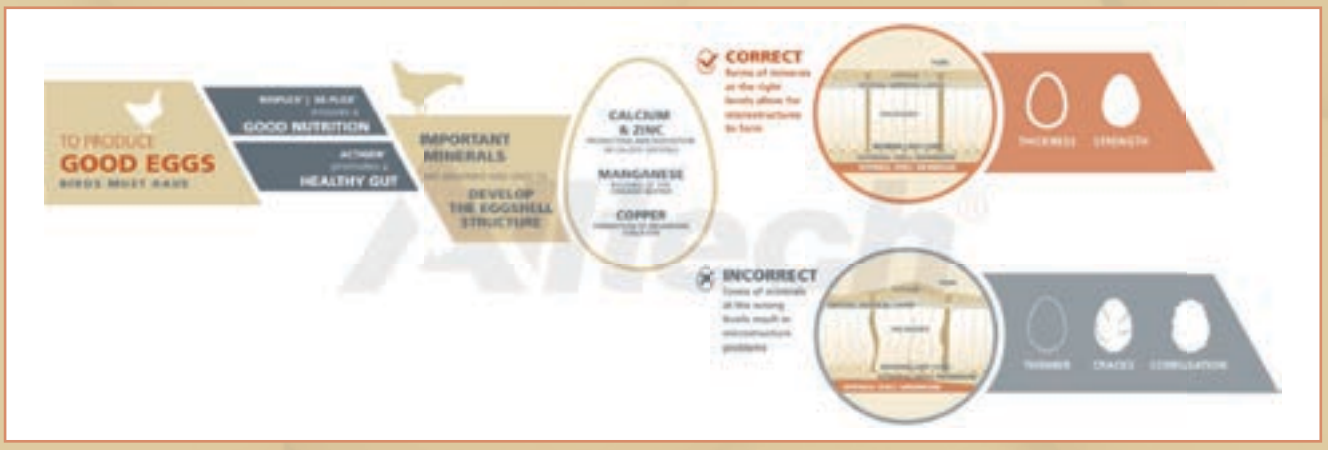
Eggshell quality

The quality of the eggshell is paramount to both producers and consumers. It is particularly important in maintaining the hygiene of eggs, as any damages or cracks will make the eggs more susceptible to bacterial contamination. Many factors influence the quality of an egg, but often shell strength is regarded as crucial. Cracks are a significant contributing factor to downgrades, and producers must be mindful of this, especially considering that second-class egg percentages are critical to profitability.

Critical minerals

Trace minerals are essential in the diets of laying hens because they participate in biochemical processes necessary for normal growth and development, including bone and eggshell formation. Egg production depends on mineral uptake and availability, emphasising the need for organic trace mineral supplementation. Studies examining the benefits of supplementing layer diets with Bioplex® trace minerals resulted in a reduced percentage of cracked eggs and increased shell thickness and density.

Shell strength depends hugely on the structure of the



A complex structure

The eggshell is a complex structure made up of organic membranes, the mineral layer and the cuticle that covers the outer surface of the shell. The base layer is formed first and comprises the mammillary cones, which then provide a platform on which other components can form. The palisade layer forms on top of this, followed by the transitional vertical crystal layer and the cuticle. Each layer consists of a highly specific structure, which provides high resistance to compressive stress.

These structures have calcium carbonate components, but their structural integrity is withheld in the organic matrix by glycoproteins and glycosaminoglycans. Ensuring that the structure of the shell is optimal will improve strength, helping to prevent breakages and hairline cracks.

The mechanism behind the creation of structural layers is multifactorial, and, as such, many things can influence their composition. The shell is created from components fed to the hen in their diet. If the diet is of poor quality, likely, the shell will also be of poor quality.

internal shell components. Studies show that where structural integrity is compromised, shell strength suffers. Minerals play a vital role in ensuring that mechanical structures can be deposited correctly, either directly through their use in complexes or as co-factors in enzymes involved in the manufacturing process.

To maintain production, the hen must be able to digest

and absorb all the energy and nutrients she needs from her diet. Egg formation is a complex and energy-rich process. Each step — be that albumen formation or shell formation — requires specific minerals and nutrients. Hens must have all their nutritional needs met, but some minerals are vital. Zinc (Zn) is a good example. Not only does it perform functions in the cells of the immune system, but it works as a co-factor for an enzyme involved in the production of calcium carbonate. Insufficient Zn can lead to weak shells. Manganese (Mn) activates an enzyme involved in the production of glycoproteins and glycosaminoglycans, which constitute 2–4% of the eggshell through their roles in the organic matrix. Copper (Cu) is involved in collagen formation, the part of the eggshell membrane surrounding the yolk and albumen and the layer on which the shell is laid. Selenium (Se) is crucial as a natural antioxidant, but also in the egg itself, and has a significant impact on maintaining freshness.

Mineral form

It is vital to consider the type of minerals utilised in diets, as this too can impact shell strength through bioavailability differences. Organic chelated minerals have superior uptake when compared to their inorganic counterparts and interact less with vitamins in the gastrointestinal tract. The type of chelate will also impact stability, interaction and, therefore, bioavailability. So, careful selection for diets should be made. Supplementation with Bioplex trace minerals typically results in an increase in the number of eggs per hen, improved hatchability and decreased mortality. These performance parameters can directly affect profitability for today's poultry producer.

Benefits of organic trace minerals in layer diets

Several commercial and peer-reviewed research trials document the benefits of organic trace minerals in layer diets:

- Ao and Pierce (2006) reported that TRT™ — with or without phytase — can improve FCR (feed/dozen eggs) and eggshell quality.
- Bioplex® Mn, Zn and Cu resulted in less egg loss and better eggshell thickness and strength compared to inorganic mineral supplements (Stefanello et al., 2014).
- Bioplex trace mineral supplementation, at a 12-times lower inclusion rate than inorganic trace minerals, resulted in improved bone strength (indicating better animal health status) and reduced mineral excretion. Even at this much lower inclusion rate, percentage lay improved, supporting the notion that complete replacement of inorganic trace minerals with Bioplex organic trace minerals is effective and safe, and that birds supplemented with Bioplex can maintain performance at lower levels, since the trace minerals in the organic form are utilised more efficiently (Boruta et al., 2007).
- Nunes et al. (2007) noted improved egg production (%) when comparing Bioplex trace minerals (at lower inclusion rates) to inorganic trace minerals, and Macalintal (2010) reported that hens fed chelated trace minerals (Bioplex) at 50% of NRC requirements, had higher egg production and average egg weight was also improved.

It is clear that trace minerals are essential for optimum health, immunity and performance throughout all stages of poultry production. To reach production potential and maximise profitability, animals need to be in optimum trace mineral status. Organic minerals (Bioplex) can be included at much lower levels in poultry diets than the current recommendations for inorganic trace minerals, without adverse effects to the animal and the environment.

Take advantage of early life growth potential

Dr Jessica Cooke, R&D Manager with Volac, explains that a heifer calf's relative ability to turn nutrients into growth peaks during the early life milk feeding period, so you simply have to take maximum advantage.

A dairy calf's milk feeding period is a golden opportunity to maximise growth. Get it right and you will prime your growing heifers for a productive milking future when they enter the adult herd at a target of between 23 and 26 months of age.

"During the first two months of its life, a dairy heifer calf is able to turn 100g of feed into 50g of growth. That's a feed conversion efficiency of 2:1 or 50%, but as the animal ages this diminishes steadily; so much so that by the time a calf is 15 months of age, 100g of feed will be delivering just 8g of growth," Dr Jessica Cooke, R&D Manager at Volac explains.

She notes that feed efficiency is at its optimum during the milk feeding period because liquid milk is more nutritious and digestible than concentrate feed – adding that prior to puberty, heifer growth focuses mainly on bone and muscle, whereas later in life heifers gain more fat and are therefore less feed efficient.

"By not taking advantage of the high feed conversion efficiency early in life heifers will have to grow more later in life (when feed conversion efficiency is low) to reach the same body weight at first calving."

Dr Cooke points out that environmental stress can adversely affect feed conversion efficiency. During periods of cold weather in the winter and/or disease challenge, calves will use more energy from their feed to keep warm and fight disease, leaving less energy available for growth.

"Feeding the right amount of a well-mixed, proven calf milk formula is crucial when making the most of the early life feed conversion efficiency," she says. "Both ingredients and volume of milk fed can affect feed efficiency; the more digestible your milk replacer, the more efficient it will be at delivering growth.

"A milk replacer's digestibility is influenced by the type of protein and fat source used, along with its manufacturing process. Consequently, it always pays to buy a calf milk replacer from a trusted supplier.

"Provided your colostrum management and feeding protocol is sound – and your calves have access to fresh water, roughage and a palatable starter concentrate – we know that feeding a good heifer calf up to 900g (750g minimum) of calf milk replacer daily will allow you to meet optimum rearing targets. The peak milk allowance (6-8 litres per day in maximum 3L feeds) should be reached by two weeks of age. Indeed, these feeding levels are absolutely crucial if you want to calve heifers down with an adequate body size at 24 months."

However, calves fed more milk will not be driven by hunger to eat starter feed to support weaning. "This means high milk fed dairy calves need to be encouraged to eat solid feed by implementing management strategies that balance the intake of nutrients from both milk and starter feed," Dr Cooke says.

Calf starter should be introduced from days three to five, but calves don't typically begin consuming measurable amounts of solid feed until they are around two weeks of age. "By five weeks of age calves should be eating 0.5kg of starter feed per day. Calves should be eating 0.7-1kg per day by six to seven weeks of age and a minimum of 1.5kg per day at weaning," she says.

Dr Cooke adds that offering forage alongside clean water daily and fresh starter feed is also important for healthy rumen development. "Feeding forage helps stabilise the rumen pH, stimulates its muscular layer and maintains the integrity and health of its wall. What's more, providing chopped barley straw – separately from starter feed during the high milk feeding period – has been shown to stimulate starter intake, improve calf weight gain and even boost forage intake after weaning," she says.

Housing and hygiene

Pairing or grouping calves from one week of age will also improve starter intake and increase weight gain, compared to calves which are grouped together later during the milk feeding period, as a result of peer stimulation.

"We recommend that calves be individually housed for the first week of life before being moved into a pair or group. However, young calves should always be housed in a separate calf unit to reduce the spread of disease from older cattle to more susceptible younger animals," Dr Cooke says.

She adds that practising good hygiene is also key to limiting the spread of disease in calf pens. "Between each calf/group, aiming for complete removal of organic material, followed by disinfection and an adequate rest period will help break the cycle of disease through the year," she says.

"Regardless of the type of housing available in which to rear calves, there is a lot you can do to improve the situation. And certainly, increased monitoring of calf growth performance and ill health will help identify patterns of issues and pinpoint weaknesses in your system."

Monitoring performance

Dr Cooke stresses the importance of setting target growth rates and then monitoring calf and heifer body weight at regular intervals to make sure your rearing programme remains on track.

"Beyond the milk feeding period, it is also important to achieve growth rate target efficiently to avoid delaying the age at first calving. A heifer calving at 24 months of age will start to return a profit in the second lactation, whereas a heifer calving at 30 months will not return a profit until it's into its third lactation. A delay in age at first calving contributes to an overall reduction in the efficiency of a dairy herd due to lost potential milking days."

However, she says that efficiency is also about getting 'more from less' or even 'the same from less'. "When it comes to providing the right pre-weaning nutrition in the current climate, we also need to consider the sustainability of our inputs. And the inputs of early life calf production are primarily concerned with the ingredients used in milk formulas.

"Sustainable sourcing of ingredients for milk powder formulations is becoming extremely important and, in this particular context, manufacturers have to consider both the impact of growing the ingredient and also the usefulness of that ingredient in meeting the nutrition requirements of the growing calf."

Dr Cooke adds that when thinking about the dairy cow, one approach to improve sustainability is to maximise the quality and use of home-grown ingredients.

"Feeding the dairy calf gives rise to the opportunity to have an impact on lifetime performance potential and efficiency through the use of modern calf milk formulas. This represents a lifetime sustainability approach far greater than what can be achieved through feeding whole milk from the cow," she argues.

Weaning calves

Weaning over a three-week period encourages increased starter feed intake, rumen development and improves the calf's ability to digest nutrients after weaning.

Dr Cooke advises gradually reduce the amount of milk offered to calves, over a three-week period between days 35 and 56 (see table 1). "This encourages starter intake. It also helps rumen development and improves the ability of the calf to digest nutrients after weaning.

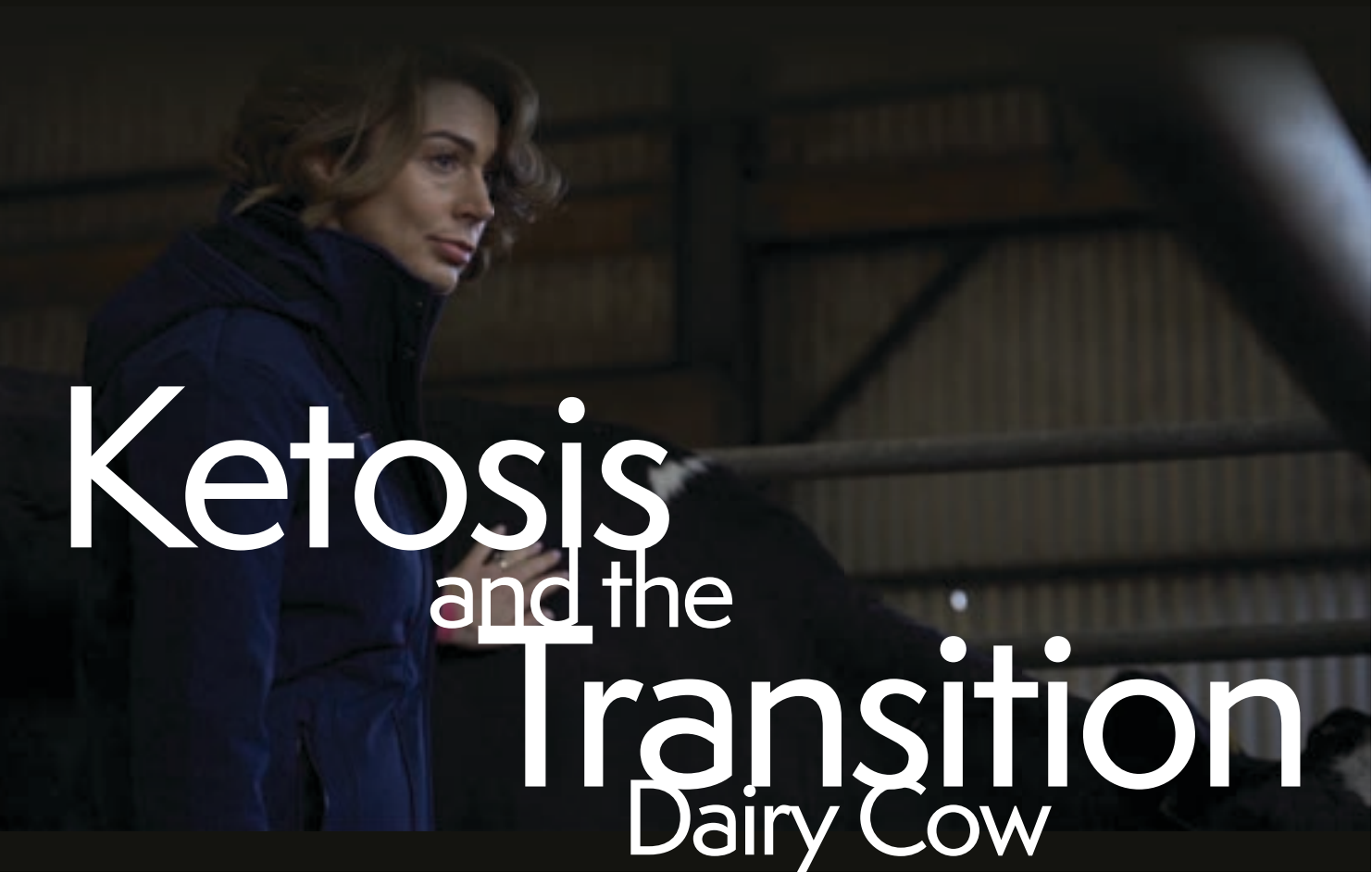
"For the high milk fed calf we now recommend a three-week weaning period between days 35 and 56 where milk replacer is fed at ≤ 750g milk solids per day to ensure calves eat enough starter to allow for sufficient rumen development."

Calves that are fed more milk over the first five weeks of life will be bigger and more vigorous. These calves will subsequently eat more starter when milk is gradually reduced from day 35 to 56. What's more, calves fed more milk, coupled with good starter intakes, will be more likely to achieve their early growth targets and lifetime milk production potential.

Week	Age (days)	Twice daily feeding rates (litres)	
		AM	PM
1	0-3	Feed colostrum	
	4-7	2.5	2.5
2 - 5	8-35	3	3
6	36-42	2.5	2.5
7	43-49	2.5	2.5
8	50-56	2.5	0
9	57+	0	0

Table 1. Recommended milk feeding plan with a three-week weaning period (for calves fed twice daily).
Stepping down period shaded in grey.

The reduction in milk solids per day will be specific to each individual dairy farm.



Ketosis and the Transition Dairy Cow

Maura Langan, Norbrook Vet Advisor, looks in more detail at ketosis, a common metabolic disorder on Irish dairy farms.

Ketosis occurs when the animal's total dietary energy intake fails to meet its requirements and so the cow begins to draw from her body reserves in a continuous state of negative energy balance (NEB). Some degree of NEB is relatively normal in recently calved cows, but the extent to which it occurs and how long it lasts are key factors in how the cow transitions into productive lactation. Essentially, ketosis occurs when the metabolic processes in the liver are being overwhelmed and ketones are produced. Unfortunately, elevated levels of ketones in the blood, urine or milk result in a suppression of the cow's appetite, creating a vicious circle that results in weight loss and a drop in milk yield.

Clinical signs

As well as elevated ketone levels, cows with ketosis can display clinical signs of the condition. Clinical signs include dullness, reduced feed intake, reduced milk production and may include behavioral changes such as excessive licking or aggression as well as staggering. Clinical ketosis is often the tip of the iceberg, and it may mean that many more cows within the herd are affected by the subclinical form of the disease without displaying clinical signs.

Subclinical ketosis is defined as the presence of elevated blood ketones without overt clinical signs. Ketone production is typically associated with a sweet smell on the animal's breath and NEB leads to a gradual loss in body condition. Reduced milk yield, lower milk protein production, increased prevalence of LDAs and ultimately reduced fertility are all associated with subclinical ketosis. Ketosis can be diagnosed with blood, milk or urine tests; the most accurate method is blood measurement of betahydroxybutyrate (BHB) concentration.

Contributing factors

There are a range of contributing factors that predispose some cows and herds to ketosis, however maximising feed intake in the transition period and thus reducing NEB in early lactation is important to the prevention of ketosis. Management factors such as providing sufficient feed space, avoiding overcrowding and the provision of quality feed may help.

Body Condition Score (BCS) at calving is a key determinant of ketosis risk. Fat cows with a BCS of ≥3.5 have reduced late dry period / early lactation feed

intake predisposing them to ketosis. Farmers are encouraged to body condition score regularly with a BCS of 3.0-3.25 at calving being the target. While the risk of ketosis is greatest in fat cows, thin cows are also susceptible, with genetics and medical history all playing a part. Any cow with additional energy needs, such as those carrying twins or with any disease or inflammation will also be at risk of ketosis.

Where possible, farmers should identify 'at risk' cows in the weeks prior to calving and remain vigilant in the first couple of weeks of lactation as even correctly conditioned, low-risk cows may be susceptible if stressed; for example, following a caesarean, a difficult calving or a case of milk fever.

Treatment

Treatment of ketosis is aimed at reestablishing normal glucose levels and reducing serum ketone concentrations. By breaking the cycle of ketone production, appetite recovers and the animal's voluntary intake begins to meet her energy requirements.

Treatment can include veterinary intervention through the administration of intravenous dextrose and possibly steroids to stimulate glucose production in the liver. For the most part, treatment of ketosis centres on the provision of glucose precursors in the form of glycerol, propylene glycol or propionates.

Propylene glycol is is usually administered as a drench at a dose rate of 200ml twice a day for the first day and 100ml twice a day thereafter for 3 days. Care should be taken as propylene glycol overdose can be toxic to rumen microbes.

A new bolus called Ketonor+ contains propionate as a source of glucose for at risk cows and also contains Vitamins A and E, selenium, niacin, cobalt and yeast to support the liver, rumen and immune system. Ketonor+ is cost-effective, does not contain antimicrobials, has no withdrawal period and is easy to administer in busy seasonal calving herds.

Although ketosis is usually seen during very early lactation, it can occur any time that the cow experiences NEB. Ketonor+ can be used as a supportive therapy in sick or convalescent cows that are at risk of ketosis alongside non-steroidal pain relief and antibiotics, where deemed appropriate by your vet.

TRACTORGUIDE2022

Michael Moroney offers an overview of the tractor market, with latest figures

Irish tractor market at its most buoyant

The Irish tractor is buoyant in 2021, showing a healthy increase in new tractor registration numbers of 25% up to the end of October, compared with the same period in 2020. Imports of used tractors, predominantly from the UK, continue to grow even stronger with registration numbers up by double that amount at 50 per cent. The Irish new tractor market is now at its most buoyant in more than 10 years. In this article, we will look at the tractor power distribution among these new tractors and examine where the regions of big tractor power are now.

With 2,305 new tractors sold we also looked at the overall level of tractor power for the year to the end of October. We show the detail of the tractor power band by county as well as the total in terms of tractor power that has arrived on the market.

The total tractor power figures make interesting reading. We have rounded the numbers in terms of power bands to simply the figures and more accurate figures will be available in early 2022. Across the eight power band segments examined, we have averaged the power output to give a total power figure (see Table 1).

The total amount of tractor power bought by Irish farmers and contractors in first ten months of 2021 was 245,215 horsepower units. The bulk of the tractor power comes in the 101 to 140hp band, which also accounts for most of the new tractor sales. The latest registration data shows that 55 per cent of the tractor power sold into Irish farming in 2021 was in this power category.

Irish Tractor Power Levels Jan - Oct 2021				
Power Bands	Number of Tractors	Power Ave	Total Power	% of Total Power
0 - 50hp	101	25	2525	1.03
50 -100hp	156	75	11700	4.77
101 -140hp	1142	120	137040	55.89
141-160hp	327	150	49050	20.00
161 - 200hp	401	175	2525	1.03
201 - 240hp	122	220	26840	10.95
241 -320hp	53	275	14575	5.94
321hp +	3	320	960	0.39
Total Power	2305	1360	245,215	100.00

Further analysis

In a further analysis of the sale of tractor power by county we can see that Cork, our biggest farming county had predictably the highest levels of new tractor sales across all power bands in the four most popular bands from 101hp right up to 340hp. Over 12 per cent of all new tractor sales take place to Cork farmers and contractors.

Cork also accounts for the highest proportion of big tractor sales,

with 17 per cent of the tractors in the 161 to 200hp category sold into Munster's largest county. The total input of new tractor power into Cork for the 10 months of 2021 was over 41,000hp units.In the smaller tractor segment, less than 50hp which are mostly landscape tractors, Dublin with its largest municipal area, accounts for the largest number of units. Dublin, alone accounts for almost 22 per cent of the total sales of smaller tractors.

The second tractor band from 50hp to 100hp, which was traditionally the livestock farmer band, is accounting for a declining number of new tractor sales. The latest figures show that this segment now accounts for less than 7 per cent of the total market in terms of numbers and significantly less in terms of tractor power.

This is a segment that has traditionally focused on new tractor sales to non-dairy livestock farmers and those with a part-time farm enterprise. The latest data shows that Mayo accounts for most tractor sales in this power category at 20% of the segment, well ahead of its nearest rival of Wicklow, followed by Cork and Wexford.

The 101hp to 140hp segment is now the most popular power band among Irish farmers and contractors, accounting for almost 50 per cent of all new tractor sales. This is now a popular segment among dairy farmers who have a range of diversified machinery needs and the incomes to fund this investment.

The county of Cork, also Ireland's largest dairy county, accounts for 12 per cent of this market segment on its own, with sales of 137 units. The next nearest rival is Tipperary, followed by Kilkenny, also strong dairying counties.

Tractors in the 141hp to 160hp power category are typically contractor machines. And as contractor numbers are evenly spread across the country, the analysis of the data shows that sales are proportionate to the levels of farming activity. Cork leads this segment once again with sales of 39 units, but only by a smaller margin ahead of Tipperary at 32 units. Wexford then takes third place in this segment, with strong sales also in Cavan. Galway, Kerry and Limerick, three counties with a high level of contractor services are also significant markets in this power band. As we drift to the higher tractor power categories, the tillage counties come more into focus. In the 161hp to 200hp power segment Cork dominates again at 17 per cent of the total based on 69 units sold. Tipperary and Wexford are joint second at 39 units each, followed by Meath, now considered the home of the potato farming sector.

Adding the last three higher power segments from 201hp upwards, this now accounts for almost 8 per cent of the total market. While county Cork still dominates, Wexford and Meath, followed by Dublin, and Louth are all significant Irish markets for higher power tractors.

The dealer impact on tractor sales

The presence of a strong dealer network does impact on the distribution of new tractor sales in Ireland. All of the top five tractor brands of Case IH, Claas, John Deere, Massey Ferguson, New Holland are well represented in Cork, many with multiple outlets, all of which supports a healthy tractor market. This situation is clearly reflected in the tractor sale statistics which show that Cork dominates the new tractor market in Ireland. The second most significant tractor market by county is Tipperary. There is also a strong dealer network in Tipperary for the top five brands, a few of which have more than one sales outlet.

Third place Wexford has a strong dealer network, with the exception of a gap in the New Holland brand presence, which traditionally a strong foothold for the brand. Claas does not have an on-the-ground presence in Wexford, with the region being serviced from neighbouring Carlow.

Division two counties in terms of new tractor sales include Kilkenny, Galway and Mayo, and are each well represented in terms of dealer presence on the ground. Some dealers are covering two counties with multiple outlets, even though the new tractor market is relatively small.

Irish tractor park figures

An examination of the tractor park figures as seen in the latest Irish Bulletin of Vehicle and Driver Statistics 2020, shows that there are 78,845 agricultural tractors licenced for use on Irish roads, an increase of almost 3 per cent compared the 2019 figures. Given the numbers of new and used imports of tractors so far for 2021, there is a strong indication that the Irish Bulletin of Vehicle and Driver Statistics for 2021 will record an even higher level of increase that could be as much as 5 per cent.

Cork dominates the numbers accounting for 10,339 of these tractors. This is followed by Tipperary at 5,339 with Galway in third place having 5,204 tractors in use.

An examination of the brands in the latest Irish Bulletin of Vehicle and Driver Statistics 2020, shows that Massey Ferguson remains the most popular tractor brand accounting for 20.6 per cent of all tractors in Ireland. New Holland remains the second most popular at almost 18 per cent, followed by John Deere at almost 16 per cent of the total. Between these three brands, they account for almost 55 per cent of all tractors on Irish farms.

Some interesting brands in the Irish Bulletin of Vehicle and Driver Statistics 2020 data include the fact that there are almost 600 JCB Fastracs in use in Ireland. The data also show that Krone, which includes Big X harvesters and Big M mowers accounted for 73 machines in Irish contractor fleets in 2020.

The least popular brand is the historic Universal tractor brand which originated in Romania and has not been sold new in Ireland for more than three decades. There are just 29 Universal tractor in use on Irish farms and the brand was originally imported by Curley Tractors from Kiltomer, Galway.

The second least popular brand is also an historic one, the Leyland brand that was imported into Ireland by Mahon & McPhillips of Kilkenny also more than three decades ago. There are now just 41 Leyland tractors being licenced for use on Irish roads.

Note: (Some of the data presented here has been compiled from resources in the FTMTA Statistics Service)

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One thing is simple: FendtONE 500

Short harvest windows, changing climate conditions and legal restrictions place ever greater demands on you the farmers and the farming technology you use. The new, future-oriented FendtONE operating concept offers simple solutions to meet these requirements more easily.

FendtONE is now being rolled out to the new generation of the Fendt 500 series. In addition to Smart Farming features, other technical innovations have been added to this series, including an optional self-cleaning air filter for the large tractors and improvements for front-loader use on the Fendt 500 Vario.

FendtONE – machine and office become one

With the FendtONE offboard digital platform, Fendt offers a system for farmers to manage their machine data and agronomic data, so they can keep an eye on them at all times. It's a better way to plan, organise and log staff and machine use as well as job orders, while saving valuable working hours out on the field. With field boundaries and waylines already recorded in a clear format on the vehicle, you can make full use of your machinery's capacity from the word go.

Meanwhile, the FendtONE onboard driver's workstation offers a number of solutions to increase the machine's efficiency. Smart Farming features such as lane guidance, subsection processing and optimising hook-ups mean less fuel and resources are used in the long term, hours are saved and the driver's work is made easier.

Documentation is easier than ever

When you work with a fertiliser spreader or slurry barrel, you need to precisely record and track the amount of nutrient applied. Now you can let Fendt Task Doc complete job-related reporting tasks for you on the machine. Profi+ models come with Fendt Task Doc as standard. In FendtONE offboard, you can plan the job and send it to a machine over the mobile network. While the job is being carried out, Fendt Task Doc collects onboard agronomic data including actual application volumes. Once complete, you'll be able to view a job report in FendtONE offboard. You can use this data to apply your nutrient stock in a sustainable way. Comprehensive documentation also supports compliance with food industry standards.

Out on the field, the new FendtONE onboard operating concept makes work easier. Drivers can personalise the display over various panes on the 12" terminal on the armrest and the optional 12" terminal in the roof. So, you can have the 12" terminal on the armrest showing the field map for use with Fendt Variable Rate Control, while the roof terminal shows the attachment's ISOBUS features. The driver can keep an eye on all the relevant functions at all times. Fendt Variable Rate Control applies seeds, fertilisers and pesticides efficiently and according to demand, while protecting resources and the environment.

Precision work with centimetre-level accuracy

Power+ and Profi+ machines include the basic lane guidance package as standard, which means they are Fendt Guide-ready. You can opt for more lane guidance functions for precision field work, including Fendt Contour Assistant, Fendt TI Auto and (from November) Fendt TI Headland.

Fendt TI Headland is an advanced headland management bundle and includes Fendt TI Auto and Fendt TI Turn Assistant. Fendt TI Auto triggers the sequence of work steps automatically when you pass the headland line. There's no need to manually activate the process by joystick. With Fendt TI Turn Assistant, the tractor and attachment turn automatically according to the pre-calculated turning processes. The land is processed efficiently and precisely and any unnecessary overlaps are avoided. It reduces the consumption of fuel and resources like seeds and fertilisers, and it's gentle on the soil.

The full Fendt TI (Teach In) feature package is available to order from November 2021. Customers with the FendtONE driver's workstation who have already ordered Fendt TI Auto will be able to upgrade to Fendt TI Headland for free in 2022.

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT

COMPACTS

GOLDONI

Base 20	4wd	6+3	-	22	-	POA
Star 3050	4wd	8+8	-	50	-	POA
Farmtrac/	4wd	9F+3R=3HST	0	22	750 KG	POA
Mitsubishi				25	750 KG	POA
				26	750 KG	POA
				30	750 KG	POA

JCB

403 AG SMART POWER	-	-	1215*	25	-	POA

*Full turning tipping load for wheeled loading shovels.

406			3250	49		POA

JOHN DEERE

1026R	4wd	2-range Hydro	525	26	-	16,742
2026R	4wd	2-range Hydro	560	26	-	20,124
2032R	4wd	2-range Hydro	615	32	-	26,149
2038R	4wd	2-range Hydro	615	38	-	28,402
3025E	4wd	2-range Hydro	615	25	-	21,875
3038E	4wd	2-range Hydro	615	38	-	25,272
3033R	4wd	3-range eHydro	995	33	-	33,915
3039R	4wd	12+12 PowrReverser	995	39	-	34,190
3039R	4wd	3-range eHydro	995	39	-	35,465
3046R	4wd	3-range eHydro	995	46	-	37,336

KIOTI DAEDONG

CS2610	4wd	Hydro	700	26	-	POA
CK2810	4wd	6+6	1025	28	-	POA
CK2810H	4wd	Hydro	1075	28	-	POA
CK3310	4wd	9+3	1250	35	-	POA
CK3310H	4wd	HYDRO 3RANGES	1275	35	-	POA
CK4010	4wd	9+3	1250	40	-	POA
CK4010H	4wd	HYDRO 3RANGES	1275	40	-	POA
NX4510C	4WD C/W CAB	24+24	2100	45	-	POA
NX4510CH	4WD C/W CAB	HYDRO	2150	45	-	POA
NX5510C	4WD C/W CAB	24+24	2350	55	-	POA
NX5510CH	4WD C/W CAB	HYDRO	2400	55	-	POA
MECHRON K9-2400 UTV 1/2 CAB	4 WD	HYDRO		24		POA
MECHRON K9-2400 UTV FULL CAB	4 WD					POA

LANDINI

2-055 Mistral	4	12x12	1200	49	540/1000	37,720
2-060 Mistral	4	12x12	1200	57	540/1000	39,900
Rex3-070F	4	12x12	2700	55	540/1000	41,924
Rex3-080F	4	12x12	2700	68	540/1000	42,721

MASSEY FERGUSON

Make/Mode	2/4w/d	No of gears	Hydrostatic	Max Linkage	Engine HP	Price
MF1520A Mech	4WD	8Fx8R		60kg	20	19,890
MF1525H Hydro	4WD	-	-3speed Hydro	1100kg	25	24,510
MF1735M Hydro	4WD	-	3speed Hydro	1200KG	35	35,700*\44,880**
MF1740M Hydro	4WD	-	3speed Hydro	1200KG	40	40,800*\49,980**
MF1750M Hydro	4WD	-	3speed Hydro	1580KG	49	55,080
MF1755M Mech	4WD	12Fx12R		1580KG	54	53,040
MF1765 Mech\Hyd	4WD	12Fx12R	3speed Hydro	1600KG	67	48,960

*\58,140**\60,180**** Plat Mech **Cab Mech *** Cab Hydro


CaseIH optum

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT

McCORMICK

X2.55	4	12x12	1200	49	540/1000	37,720
X2.60	4	12x12	1200	57	540/1000	39,900
X3.70F	4	12x12	2700	55	540/1000	41,924
X3.80F	4	12x12	2700	68	540/1000	42,721

NEW HOLLAND

Boomer Series						
Boomer 25 Compact	4wd	Hydro	450	24.7	-	€16,440
Boomer 25	4wd	Hydro	650	27	-	€18,066
Boomer 35 CAB	4wd	12+12	820	38	-	€30,709
Boomer 35 CAB	4wd	Hydro	820	38	-	€32,559
Boomer 35 ROPS	4wd	12+12	820	38	-	€24,010
Boomer 35 ROPS	4wd	Hydro	820	38	-	€24,546
Boomer 40 CAB	4wd	12x12	820	41	-	€33,063
Boomer 40 CAB	4wd	Hydro	820	41	-	€34,913
Boomer 40 ROPS	4wd	12x12	820	41	-	€26,363
Boomer 40 ROPS	4wd	Hydro	820	41	-	€26,899
Boomer 45 CAB	4wd	16x16	1250	47	-	€34,300
Boomer 45 CAB	4wd	Hydro	1250	47	-	€36,150
Boomer 45 ROPS	4wd	16x16	1250	47	-	€27,600
Boomer 45 ROPS	4wd	Hydro	1250	47	-	€28,136
Boomer 50 CAB	4wd	16+16	1250	52	-	€35,561
Boomer 50 CAB	4wd	Hydro	1250	52	-	€37,411
Boomer 50 ROPS	4wd	16+16	1250	52	-	€28,862
Boomer 50 ROPS	4wd	Hydro	1250	52	-	€29,398
Boomer 55 CAB	4wd	16x16	1250	57	-	€36,958
Boomer 55 CAB	4wd	Hydro	1250	57	-	€38,808
Boomer 55 ROPS	4wd	16x16	1250	57	-	€30,258
Boomer 55 ROPS	4wd	Hydro	1250	57	-	€30,749

SONALIKA

Solis 20 Rops	4wd	6 + 2	500kg	20	17	10,950
Solis 26 Rops	4wd	6 + 2	600kg	26	23	12,450
Solis 26 Rops	4wd	Hydrostatic	600kg	26	23	14,990

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CASE IH

New Holland Boomer 55

Case IH Farmall C Series

51-80HP

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
CASE IH						
Farmall A						
55	2wd	12+12	2,700	55		31,495
55	4wd	12+12	2,700	55		39,017
65	2wd	12+12	2,700	65	-	32,360
65	4wd	12+12	2,700	65	-	39,881
75	2wd	12+12	2,700	75	-	33,711
75	4wd	12+12	2,700	75	-	41,232
Farmall C						
55	2wd	12+12	2500	56	-	38,835
55	4wd	12+12	2500	56	-	43,425
65	2wd	12+12	2500	65	-	40,523
65	4wd	12+12	2500	65	-	45,420
75	2wd	12+12	2500	75	-	41,269
75	4wd	12+12	2500	75	-	46,807
CLAAS						
Nexos 210 VE	2wd	12+12	2500	75	540	POA
Nexos 210 VE	4wd	12+12	2500	75	540	POA
Nexos 210 VL	2wd	12+12	3100	75	540	POA
Nexos 210 VL	4wd	12+12	3100	75	540	POA
Nexos 210 F	2wd	12+12	3100	75	540	POA
Nexos 210 F	4wd	12+12	3100	75	540	POA
Elios 210	4wd	12+12	2500	75	540	POA
Elios 220	4wd	12+12	2500	84	540	POA
Atos 220	4wd	8+8	3600	76	540	POA
DEUTZ FAHR						
3 Series						
3050 Basso	4wd	SS 12x12	1200	51		35,684
3050	4wd	SS 12x12	1200	51		35,914
3060	4wd	SS 12x12	1200	59		37,707
5D						
5070 D Keyline	4wd	SS 15+15	2500	66		51,110
5080 D Keyline	4wd	SS 15+15	2500	76		52,980
5070 DF Keyline	4wd	SS 8x8	2700	66		42,160
5080 DF Keyline	4wd	SS 8x8	2700	76		43,720

Note: SS = synchro shuttle.

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
FENDT						
207 S Vario Gen3	4wd	-	-	79	-	90,953
208 S Vario Gen3	4wd	-	-	84	-	92,925
GOLDONI						
Star 50	4wd	8+8	-	52	-	POA
Star 3070	4wd	8+8	-	63	-	POA
Star 70	4wd	8+8	-	70	-	POA
Star 75	4wd	8+8	-	72	-	POA
Quazar 70	4wd	8+8	-	70	-	POA
JCB						
516-40	-	-	1600	47	-	POA
520-40	-	-	2000	49	-	POA
407 AG	-	-	3,326	64	-	POA
TM180	-	-	1800	64	-	POA
409 AG	-	-	3,648	74	-	POA
TM220	-	-	2200	74	-	POA
525-60	-	-	2500	74	-	POA
JOHN DEERE						
4052M compact	4wd	3-range eHydro	1229	52	-	33,529
4066M compact	4wd	3-range eHydro	1229	66	-	34,695
4052R compact*	4wd	3-range eHydro	1229	52	-	47,205
4066R compact*	4wd	3-range eHydro	1229	66	-	50,289
5050E	4wd	9+3	1800	49	-	32,590
5058E	4wd	12+12	1800	60	-	37,113
5067E	4wd	12+12	1800	68	-	40,808
5075E	4wd	12+12	1800	75	-	43,150
5075GF (fruit)	4wd	12+12	2888	75	-	49,898
5075GL (low profile)	4wd	24+24	2218	75	-	51,682
5075GN (narrow)	4wd	12+12	2888	75	-	57,647
5075GV (vineyard)	4wd	12+12	2888	75	-	56,922
5075M	4wd	16+16	4326	75	-	57,120

*The 4052R & 4066R compact prices include ComfortGard cab. The 5075M and 5090M models are also available with 2WD.

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
KUBOTA						
L1522 (ROPS)	4WD	8F/8R	1750kg	52	N/A	€ 25,859
L1552 (ROPS)	4WD	HDS	1750kg	52	N/A	€ 29,364
L2522 (CAB)	4WD	16F/16R	1750kg	52	N/A	€ 37,887
L2622 HST CAB	4WD	HST 3 Range	1750KG	62	N/A	€ 46,505
M4-063	4WD	18F/18R	2500kg	66	N/A	€ 45,603
M4-063 (ROPS)	4WD	18F/18R	2500kg	66	N/A	€ 36,031
M4-073	4WD	18F/18R	2500kg	74	N/A	€ 48,260
M4-073	4WD	36F/36R	2500kg	74	N/A	€ 49,342

New Holland T5 Series

Landini 5 Series

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
LANDINI						
4-060	4	24/24	3000	61	540/1000	54,423
4-070	4	24/24	3000	68	540/1000	55,383
4-080	4	24/24	3000	75	540/1000	56,091
5-085	4	24/24/	3900	75	540/1000	66,559
MASSEY FERGUSON						
MF3700 Series						
MF3707V				75		POA
MF3707S				75		POA
MF3707F				75		POA
MF3707WF				75		POA
MF3707AL				75		POA
MF 3708 (V) (GE) (S) (F) (WF)				85		POA
MF 3709 (V) (GE) (S) (F) (WF)				95		POA
MF 3710 (GE) (S) (F) (WF)				105		POA
S Special Version. . F Fruit Version. GE Ground Effect Version. WF Wide Fruit Version						
McCORMICK						
X4.60	4	24/24	3000	61	540/1000	54,423
X4.70	4	24/24	3000	68	540/1000	55,383
X4.80	4	24/24	3000	75	540/1000	56,091
X5.085	4	24/24	3900	75	540/1000	66,559
NEW HOLLAND						
T4S						
T4S.55	2wd	8+8		55		€36,366
T4S.55	4wd	8+8		55		€43,411
T4S.65	2wd	8+8		65		€37,240
T4S.65	4wd	8+8		65		€44,286
T4S.75	2wd	8+8		75		€38,532
T4S.75	4wd	8+8		75		€45,356
T4						
T4.55	2wd	12+12	2760	58	-	€49,942
T4.55	4wd	12+12	2760	58	-	€53,657
T4.65	2wd	12+12	2760	65	-	€51,378
T4.65	4wd	12+12	2760	65	-	€55,093
T4.75	2wd	12+12	2760	75	-	€52,447
T4.75	4wd	12+12	2760	75	-	€56,162
T5						
T5.80 mech	4wd	12+12	3884	80	-	€65,610
T5.80 DC	4wd	24x24	3884	80	-	€75,167
T5.80 P/S	4wd	12+12	3884	80	-	€70,879
SAME						
DELFINO						
Delfino 50 Basso	4wd	SS 12x12	1200	51		34,010
Delfino 50	4wd	SS 12x12	1200	51		34,226
Delfino 60	4wd	SS 12x12	1200	59		35,940
DORADO						
Dorado 80 Natural	4wd	SS 15+15	3500	66		43,580
Dorado 90 Natural	4wd	SS 15+15	3500	76		46,690
FRUTTETO						
Frutetto 70 Natural	4wd	SS 8x8	3050	66		42,160
Frutetto 80 Natural	4wd	SS 8x8	3050	76		43,720
SONALIKA						
Solis 50 Rops	4wd	8+2	1600	50	48	26,000
Solis 50 with cab	4wd	8+2	1600	50	48	29,500
Solis 75 with cab	4wd	12+12	2500	75	68	37,850

81-150 HP

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
CASE IH						
Farmall C						
90	4wd	12+12	4400	86	-	56,809
100	4wd	12+12	4400	99	-	60,543
Farmall C PS						
90	4wd	12+12	4400	86	-	59,229
100	4wd	12+12	4400	99	-	62,964
110	4wd	12+12	4400	107	-	65,639
120	4wd	12+12	4400	114		69,182
Farmall C Hi-Lo						
90	4wd	PS24+24	4400	86	-	63,652
100	4wd	PS24+24	4400	99	-	67,340
110	4wd	PS24+24	4400	107	-	69,947
120	4wd	PS24+24	4400	114		73,443
Farmall C Hi-Lo HD						
100	4wd	PS24+24	4400	99	-	82,997
110	4wd	PS24+24	4400	107	-	85,634
120	4wd	PS24+24	4400	114		89,133
Luxxum						
100	4wd	32 x 32	4701	97		100,190
110	4wd	32 x 32	4701	107		102,689

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
120	4wd	32 x 32	4701	117		106,189
Vestrum CVX						
100	4wd	CVT 40kph	5600	100	-	116,183
110	4wd	CVT 40kph	5600	110	-	119,160
120	4wd	CVT 40kph	5600	120	-	123,808
130	4wd	CVT 40kph	5600	130	-	127,600
Maxxum						
115	4wd	PS16x16	7115	116	-	113,100
125	4wd	PS16x16	7115	125	-	117,123
135	4wd	PS16x16	7115	135	-	121,144
145	4wd	PS16x16	7115	145	-	123,798
150	4wd	PS16x16	7115	145	-	127,530
Maxxum Multicontroller						
125	4wd	PS24x24	7864	125	-	128,169
135	4wd	PS24x24	7864	135	-	132,194
145	4wd	PS24x24	7864	145	-	134,850
150	4wd	PS24x24	7864	145	-	138,771
Maxxum CVX						
125	4wd	CVT 40kph	7864	125	-	143,222
135	4wd	CVT 40kph	7864	135	-	147,324
145	4wd	CVT 40kph	7864	145	-	150,002
150	4wd	CVT 40kph	7864	145	-	153,961
Puma						
140	4wd	SP 18x6 40kph	8257	140		137,532
150	4wd	SP 18x6 40kph	8257	150		141,964
Puma Multicontroller						
150	4wd	FPS18x6 50kph	8257	150	-	157,995
Puma CVX						
150	4wd	CVT 50kph	8257	150	-	177,638

Note: PS = power shuttle, SS = synchro shuttle.
FPS = full power shift SP = semi power shift

CLAAS

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
Nexos 220 VE	2wd	12+12	2500	85	540	POA
Nexos 220 VE	4wd	12+12	2500	85	540	POA
Nexos 220 VL	2wd	12+12	3100	85	540	POA
Nexos 220 VL	4wd	12+12	3100	85	540	POA
Nexos 220 F	2wd	12+12	3100	85	540	POA
Nexos 220 F	4wd	12+12	3100	85	540	POA
Nexos 230 VE	2wd	12+12	2500	92	540	POA
Nexos 230 VE	4wd	12+12	2500	92	540	POA
Nexos 230 VL	2wd	12+12	3100	92	540	POA
Nexos 230 VL	4wd	12+12	3100	92	540	POA
Nexos 230 F	2wd	12+12	3100	92	540	POA
Nexos 230 F	4wd	12+12	3100	92	540	POA
Nexos 240 VE	2wd	12+12	2500	103	540	POA
Nexos 240 VE	4wd	12+12	2500	103	540	POA
Nexos 240 VL	2wd	12+12	3100	103	540	POA
Nexos 240 VL	4wd	12+12	3100	103	540	POA
Nexos 240 F	2wd	12+12	3100	103	540	POA
Nexos 240 F	4wd	12+12	3100	103	540	POA
Nexos 250 VL	2wd	12+12	3100	112	540	POA
Nexos 250 VL	4wd	12+12	3100	112	540	POA
Nexos 250 F	2wd	12+12	3100	112	540	POA
Nexos 250 F	4wd	12+12	3100	112	540	POA
Elios 230	4wd	12+12	2500	92	540	POA
Elios 240	4wd	12+12	2500	103	540	POA
Atos 230	4wd	8+8	3600	88	540	POA
Atos 240	4wd	8+8	3600	97	540	POA
Atos 330	4wd	20+20	4800	88	540	POA
Atos 340	4wd	20+20	4800	102	540	POA
Atos 350	4wd	20+20	4800	113	540	POA
Arion 410 CLASSIC (Stage V)	4wd	16+16	4500	90	540/1000	POA
Arion 410 CIS Panoramic (Stage V)	4wd	16+16	4500	90	540/1000	POA
Arion 420 CLASSIC (Stage V)	4wd	16+16	4500	100	540/1000	POA
Arion 420 CIS Panoramic (Stage V)	4wd	16+16	4500	100	540/1000	POA
Arion 430 CLASSIC (Stage V)	4wd	16+16	6000	115	540/1000	POA
Arion 430 CIS Panoramic (Stage V)	4wd	16+16	6000	115	540/1000	POA
Arion 440 CLASSIC (Stage V)	4wd	16+16	6000	125	540/1000	POA
Arion 440 CIS Panoramic (Stage V)	4wd	16+16	6000	125	540/1000	POA
Arion 440 CIS+ Panoramic (Stage V)	4wd	16+16	6000	125	540/1000	POA
Arion 450 CLASSIC (Stage V)	4wd	16+16	6000	135	540/1000	POA
Arion 450 CIS Panoramic (Stage V)	4wd	16+16	6000	135	540/1000	POA
Arion 450 CIS+ Panoramic (Stage V)	4wd	16+16	6000	135	540/1000	POA
Arion 460 CLASSIC (Stage V)	4wd	16+16	6000	145	540/1000	POA
Arion 460 CIS Panoramic (Stage V)	4wd	16+16	6000	145	540/1000	POA
Arion 460 CIS + Panoramic (Stage V)	4wd	16+16	6000	145	540/1000	POA
Arion 470 CLASSIC (Stage V)	4wd	16+16	6000	155	540/1000	POA
Arion 470 CIS Panoramic (Stage V)	4wd	16+16	6000	155	540/1000	POA
Arion 470 CIS + Panoramic (Stage V)	4wd	16+16	6000	155	540/1000	POA

Claas Arion 410 Stage V

Deutz Fahr 6 Series

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
ARION 510 CLASSIC (Stage 5)	4wd	24+24	6500	125	540/1000	POA
Arion 510 CIS / CIS+ (Stage 5)	4wd	24+24	6500	125	540/1000	POA
Arion 510 CEBIS (Stage 5)	4wd	24+24	6500	125	540/1000	POA
Arion 510 CMATIC CIS+/CEBIS (Stage 5)	4wd	CVT	6500	125	540/1000	POA
Arion 530 CIS / CIS+ (Stage 5)	4wd	24+24	6500	145	540/1000	POA
Arion 530 CEBIS (Stage 5)	4wd	24+24	6500	145	540/1000	POA
Arion 530 CMATIC CIS+/CEBIS (Stage 5)	4wd	CVT	6500	145	540/1000	POA
Arion 610 CLASSIC (Stage 5)	4wd	24+24	6500	145	540/1000	POA
Arion 610 CIS / CIS+ (Stage 5)	4wd	24+24	6500	145	540/1000	POA
Arion 610 CEBIS (Stage 5)	4wd	24+24	6500	145	540/1000	POA
Arion 610 CMATIC CIS+/CEBIS (Stage 5)	4wd	CVT	6500	145	540/1000	POA

DEUTZ FAHR

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
5D						
5090 Keyline	4wd	SS 15+15	2500	88		58,180
5100 Keyline	4wd	SS 15+15	2500	97		60,050
5090D Ecoline	4wd	SS10+10	2650	88		TBA *
5090.4D Ecoline	4wd	SS10+10	2650	88	-	TBA *
5090D LS	4wd	SS30+15	3600	88	-	TBA *
5090.4D LS	4wd	SS30+15	3600	88	-	TBA *
5090D GS	4wd	30+15	3600	88	-	TBA *
5090.4D GS	4wd	30+15	3600	88	-	TBA *
5100.4D GS	4wd	30+15	3600	102	-	TBA *
5 Series						
5095 LS	4wd	SS10+10	4525	102		78,570
5095 GS	4wd	10X10	4525	102		83,810
5100 LS	4wd	SS10+10	4525	95		80,140
5100 GS	4wd	10X10	4525	95		85,380
5105 LS	4wd	SS10+10	4525	106		81,660
5105 GS	4wd	10X10	4525	106		86,910
5115 LS	4wd	SS10+10	4855	116		82,990
5115 GS	4wd	10X10	4855	116		88,230
5125 LS	4wd	SS10+10	5410	123	-	85,520
5125 GS	4wd	10X10	5410	123	-	90,760
6C Series						
6115 C PS	4wd	20 x 20	5410	126		102,120
6115 C RV Shift	4wd	20 x 16	7000	126		118,370
6115 C TTV	4wd	CVT	7000	126		122,210
6125 C PS	4wd	30 x 30	7000	136		114,120
6125 C RV Shift	4wd	20 x 16	7000	136		122,570
6125 C TTV	4wd	CVT	7000	136		126,410
6135 C PS	4wd	30 x 30	7000	143		118,320
6135 C RV Shift	4wd	20 x 16	7000	143		126,770
6135C TTV	4wd	CVT	7000	143		130,610

* TBA Waiting for release of Stage V models

FARMTRAC

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
FT 9120 DT	4wd	24+24 Carraro	4500	112	-	POA
FT 690 DT	4wd	24+24	3000	88	-	POA
FT 675 DT	4wd	12+12	2500	81	-	POA

FENDT

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
200 S Vario Gen3						
209	4wd	-	-	94	-	95,143
210	4wd	-	-	104	-	97,975
211	4wd	-	-	114	-	101,884
300 Vario Gen4						
311	4wd	-	-	113	-	115,418
312	4wd	-	-	123	-	118,807
313	4wd	-	-	133	-	121,674
314	4wd	-	-	142	-	127,204
500 Vario Gen3						
512	4wd	-	-	131	-	140,534
513	4wd	-	-	141	-	144,152
514	4wd	-	-	156	-	147,772
700 Vario Gen6						
714	4wd	-	-	150	-	167,985

JCB

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
532-60 AG	-	-	3200	109	-	POA
532-70 AG Super	-	-	3200	130	-	POA
532-70 AG	-	-	3200	109	-	POA
532-70 Super	-	-	3200	130	-	POA
532-70 Agri Xtra	-	-	3200	150	-	POA
538-60 AG	-	-	3800	109	-	POA
538-60 Super	-	-	3800	130	-	POA
538-60 Agri Xtra	-	-	3800	150	-	POA
542-70 AG	-	-	4200	109	-	POA
542-70 Super	-	-	4200	130	-	POA
542-70 Agri Xtra	-	-	4200	150	-	POA
560-80 Agri Super	-	-	6000	130	-	POA
560-80 Agri Xtra	-	-	6000	150	-	POA
TM 320	-	-	3200	130	-	POA
TM320s	-	-	3200	150	-	POA

SERIE 5

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With performance comparable to machines in a higher category, the new **Serie 5 Stage V** is perfect both for working in the open field and on the farm, performing any task with maximum efficiency and offering excellent operator comfort. Designed and manufactured to meet the needs of every farm, with particular attention to the human factor and to style: a winning mix that has led to the **Landini 5-120 Dynamic** model being nominated as a finalist for the **'Tractor of the Year 2022'** award in the Best Utility category.

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Passion for Innovation.

ARGOTRACTORS


Farmtrac FT 690


Fendt 500 Vario

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
TM 420	-	-	4200	150	-	POA
TM 420s	-	-	4200	173	-	POA
411 Agri	-	-	5585	109	-	POA
413S	-	-	5410	150	-	POA
417 Agri	-	-	6129	125	-	POA
536-95 AG	-	-	3600	109	-	POA
536-95 Super	-	-	3600	130	-	POA
536-95 Agri Xtra	-	-	3600	150	-	POA
JOHN DEERE						
5090M	4wd	16+16	4326	90	-	58,588
5100M	4wd	16+16	4326	100	-	61,477
5115M	4wd	16+16	4326	115	-	65,321
6090M	4wd	24+24	4350	90/100	-	82,693
6100M	4wd	24+24	4350	100/111	-	85,101
6110M	4wd	24+24	4350	110/122	-	87,013
6120M	4wd	24+24	4350	120/133	-	90,457
6130M	4wd	24+24	5700	130/144	-	95,677
6140M	4wd	24+24	5700	140/155	-	99,228
6145M	4wd	24+24	6400	145/161	-	107,637
6R 110	4wd	24+24	6400	110/135	-	110,564
6R 120	4wd	24+24	6400	120/145	-	113,893
6R 130	4wd	24+24	6400	130/156	-	119,825
6R 140	4wd	24+24	6400	140/166	-	127,002
6R 145	4wd	20+20	7650	145/192	-	141,219
KUBOTA						
M5-092	4WD	36F/36R	4,100 kg	95	N/A	€ 57,489
M5-112	4WD	36F/36R	4,100 kg	110	N/A	€ 61,036
M6-101U	4WD	24F/24R	5,000 kg	104	N/A	€ 62,145
M6-111U	4WD	24F/24R	5,000 kg	111	N/A	€ 66,623
M6-121U	4WD	24F/24R	6,100 kg	123	N/A	€ 73,196
M6-131U	4WD	24F/24R	6,100 kg	133	N/A	€ 77,857
M6-141U	4WD	24F/24R	6,100 kg	143	N/A	€ 88,025
M6-122	4WD	24F/24R	7,000 kg	123	N/A	€ 89,835

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
M6-132	4WD	24F/24R	7,000 kg	133	N/A	€ 94,005
M6-142	4WD	24F/24R	7,000 kg	143	N/A	€ 97,337
M7-133	4WD	30F/15R PS or KVT	9,400 kg	130	N/A	€ 116,493 **
M7-153	4WD	30F/15R PS or KVT	9,400 kg	150	N/A	€ 118,417 **
**FROM						
LANDINI						
5-100	4	24x24	4500	95	540/1000	80,903
5-110	4	24x24	4500	102	540/1000	84,076
5-120	4	24x24	4500	114	540/1000	86,741
MASSEY FERGUSON						
MF3700 Series						
MF3708V				85		POA
MF3709V				95		POA
MF3708S				85		POA
MF3709S				95		POA
MF3708F				85		POA
MF3709F				95		POA
MF3708WF				85		POA
MF3708WF				95		POA
MF3708AL				85		POA
MF3709AL				95		POA
MF 4700M Platform						
MF 4708 M	2/4wd	12x12	3000kg	82		51,010
MF 4709 M	2/4wd	12x12	3000kg	92		54,020
MF 4708 M	2/4wd	24x24/2	3000kg	82		53,180
MF 4709 M	2/4wd	24x24/2	3000kg	92		56,190
MF 4700M Cab						
MF 4708M	2/4wd	12x12	3000kg	82		57,960
MF 4709M	2/4wd	12x12	3000kg	92		60,660
MF 4708M	2/4wd	24x24/2	3000kg	82		60,130
MF 4709M	2/4wd	24x24/2	3000kg	92		62,830
MF 4710M	4wd	12x12	3000kg	100		62,820
MF 4710M	4wd	24x24/2	3000kg	100		64,990


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Kubota M6-142

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
MF 5700M						
MF 5709M	4wd	16x16/4	4300kg	95		71,570
MF 5710M	4wd	12x12	4300kg	105		70,330
MF 5711M	4wd	12x12	4300kg	115		73,060
MF 5710M	4wd	16x16/4	4300kg	105		74,270
MF 5711M	4wd	16x16/4	4300kg	115		76,970
MF 5712M	4wd	12x12	5300kg	125		77,700
MF 5713M	4wd	12x12	5300kg	135		80,400
MF 5S series						
MF 5S.105	4wd	16x16/4	6000 kg	105		85,350
MF 5S.115	4wd	16x16/4	6000 kg	115		88,050
MF 5S.125	4wd	16x16/4	6000 kg	125		91,530
MF 5S.135	4wd	16x16/4	6000 kg	135		94,230
MF 5S.145	4wd	16x16/4	6000 kg	145		96,930
MF 5S.105	4wd	24x24/6	6000 kg	105		88,050
MF 5S.115	4wd	24x24/6	6000 kg	115		90,750
MF 5S.125	4wd	24x24/6	6000 kg	125		94,230
MF 5S.135	4wd	24x24/6	6000 kg	135		96,930
MF 5S.145	4wd	24x24/6	6000 kg	145		99,630
MF 6S Series						
MF 6S.135 Dyna-6	4wd	24x24/6	7100 kg	135	150	108,860
MF 6S.145 Dyna-6	4wd	24x24/6	7100 kg	145	160	111,560
MF 6S.135 Dyna-VT	4wd	CVT	9600 kg	135	150	132,300
MF 6S.145 Dyna-VT	4wd	CVT	9600 kg	145	160	135 ,000
McCORMICK						
X5.100	4	24x24	4500	95	540/1000	80,903
X5.110	4	24x24	4500	102	540/1000	84,076
X5.120	4	24x24	4500	114	540/1000	86,741
NEW HOLLAND						
T5						
T5.90 P/s	4wd	12+12	3884	90	-	€71,702
T5.90	4wd	12+12	3884	90	-	€66,432
T5.90 DC	4wd	24x24	3884	90	-	€75,752
T5.100 P/S	4wd	12+12	3884	100	-	€74,830
T5.100	4wd	12+12	3884	100	-	€69,560
T5.100 DC	4wd	24x24	3884	100	-	€78,829
T5.110 P/S	4wd	12+12	3884	110	-	€77,431

John Deere 600 series

T5.110 DC	4wd	24x24	3884	110	-	€81,724
T5.120 P/S	4wd	12+12	3884	117	-	€80,837
T5.120 DC	4wd	24x24	3884	117	-	€85,085
T5.100 DC 1.5	4wd	24x24	3884	100	-	€80,066
T5.110 DC 1.5	4wd	24x24	3884	110	-	€82,588
T5.120 DC 1.5	4wd	24x24	3884	117	-	€85,934
T5 EC Stage V						
T5.100	4wd	16+16	5420	100	-	€91,625
T5.110	4wd	16+16	5420	110	-	€94,188
T5.120	4wd	16+16	5420	117	-	€97,608
T5 Stage V AutoCommand						
T5.110 AC	4wd	CVT	5500	100/110	-	€112,653
T5.120 AC	4wd	CVT	5500	110/120	-	€115,572
T5.130 AC	4wd	CVT	5500	120/130	-	€120,025
T5.140 AC	4wd	CVT	5500	130/140	-	€123,741
T5 Stage V DCT						
T5.110 DCT	4wd	DCT	5500	100/110	-	€103,541
T5.120 DCT	4wd	DCT	5500	110/120	-	€106,209
T5.130 DCT	4wd	DCT	5500	120/130	-	€110,381
T5.140 DCT	4wd	DCT	5500	130/140	-	€114,023
T6 Stage V						
T6.155 EC	4wd	16+16	7864	125/155	-	€111,734

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
T6.155 AC	4wd	CVT	7864	125/155	-	€150,680
T6.155 DCT	4wd	DCT	7864	125/155	-	€143,288
T6.160	4wd	16+16	7864	-	-	€117,488
T6.160 DCT	4wd	DCT	7864	-	-	€149,311
T6.175 AC	4wd	CVT	7864	145/175	-	€155,823
T6.175 DCT	4wd	DCT	7864	145/175	-	€149,004
T6.180 EC	4wd	16+16	7864	145/175	-	€120,062
T6.180 AC	4wd	CVT	7864	145/175	-	€158,991
T6.180 DCT	4wd	DCT	7864	145/175	-	€152,173
T7. SWB						
T7.190 RC	4wd	18+6	8257	150/190		Classic €141,569
T7.190 PC	4wd	18+6	8257	150/190		Classic €145,271
T7.190 RC	4wd	18+6	8257	150/190		Sidewinder €146,447
T7.190 PC	4wd	18+6	8257	150/190		Sidewinder €150,149
T7.190 AC	4wd	CVT	8257	150/190		Sidewinder €155,927

SAME

DORADO						
Dorado 90 Natural	4wd	SS 15+15	2500	88		58,180
Dorado 100 Natural	4wd	SS 15+15	2500	97		60,050
Dorado 90 Classic	4wd	SS10+10	2650	88		TBA *
Dorado 90.4 Classic	4wd	SS10+10	2650	88	-	TBA *
Dorado 90 LS	4wd	SS30+15	3600	88	-	TBA *
Dorado 90.D LS	4wd	SS30+15	3600	88	-	TBA *
Dorado 90 GS	4wd	30+15	3600	88	-	TBA *
Dorado 90.4 GS	4wd	30+15	3600	88	-	TBA *
Dorado 100.4 GS	4wd	30+15	3600	102	-	TBA *
EXPLORER						
Explorer 95 LS	4wd	SS10+10	4525	102		78,570
Explorer 95 GS	4wd	10X10	4525	102		83,810
Explorer 100 LS	4wd	SS10+10	4525	95		80,140
Explorer 100 GS	4wd	10X10	4525	95		85,380
Explorer 105 LS	4wd	SS10+10	4525	106		81,660
Explorer 105 GS	4wd	10X10	4525	106		86,910
Explorer 115 LS	4wd	SS10+10	4855	116		82,990
Explorer 115 GS	4wd	10X10	4855	116		88,230
Explorer 125 LS	4wd	SS10+10	5410	123	-	85,520
Explorer 125 GS	4wd	10X10	5410	123	-	90,760
VIRTUS						
Virtus 115 PS	4wd	20 x 20	5410	126		102,120

Landini 5 Series

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
Virtus 6115 RV Shift	4wd	20 x 16	7000	126		118,370
Virtus 125 PS	4wd	30 x 30	7000	136		114,120
Virtus 125 RV Shift	4wd	20 x 16	7000	136		122,570
Virtus 135 PS	4wd	30 x 30	7000	143		118,320
Virtus 135 RV Shift	4wd	20 x 16	7000	143		126,770

TBA * Waiting for release of Stage V models

SONALIKA

Solis 90	4wd	12+12	2500	90	81	39,950

VALTRA

A5 GL Series						
A85SH	4	12 x 12	3000	85	85	€ 58,556
A95SH	4	12 x 12	3000	95	95	€ 61,482
A105MH	4	12 x 12	4300	105	105	€ 65,216
A115MH	4	12 x 12	4300	115	115	€ 68,172


McCormick X5 Series


New Holland T5

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
A125LH	4	12 x 12	5200	125	125	€ 71,126
A135LH	4	12 x 12	5200	135	135	€ 74,080
A5 HT4 Series						
A105MH4	4	24 x 24	4300	105	105	€ 70,446
A114MH4	4	24 x 24	4300	115	115	€ 73,401
G5 HiTech						
G105H	4	24 X 24	6000	105/110	105	€ 88,270
G115H	4	24 X 24	6000	115/120	115	€ 90,929
G125eH	4	24 X 24	6000	125/130	125	€ 93,587
G135H	4	24 X 24	6000	135/145	135	€ 96,246
G5 Active						
G105A	4	24 X 24	6000	105/110	105	€ 90,353
G115A	4	24 X 24	6000	115/120	115	€ 93,012
G125eA	4	24 X 24	6000	125/130	125	€ 95,671
G135A	4	24 X 24	6000	135/145	135	€ 98,330
G5 Versu						
G105V	4	24 X 24	6000	105/110	105	€ 94,855
G115V	4	24 X 24	6000	115/120	115	€ 97,514
G125eV	4	24 X 24	6000	125/130	125	€ 100,172
G135V	4	24 X 24	6000	135/145	135	€ 102,831
N5 HiTech						
N135H	4	30 x 30	7800	135/145	135	€110,959
N5 Active						
N135A	4	30 x 30	7800	135/145	135	€122,084
N5 Versu						
N135V	4	30 x 30	7800	135/145	135	€126,466
N5 Direct						
N135D	4	30 x 30	7800	135/146	135	€133,944

151-200 HP

CASE IH

Case IH						
Puma						
165	4wd	SP 18x6 40kph	8257	165	-	148,719
Puma Multicontroller						
165	4wd	FPS18+6 50kph	8257	165	-	164,318
185	4wd	FPS18+6 50kph	10463	180	-	194,763

SAME Explorer Stage V

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
Puma CVX						
165	4wd	CVT 50kph	8257	165	-	183,343
175	4wd	CVT 50kph	8257	180	-	189,851
185	4wd	CVT 50kph	10463	180	-	216,677

FPS = full power shift SP = semi power shift

CLAAS

Arion 550 CIS/ CIS+ (Stage 5)	4wd	24+24	6900	165	540/1000	POA
Arion 550 CEBIS (Stage 5)	4wd	24+24	6900	165	540/1000	POA
Arion 550 CMATIC CIS+ / CEBIS (Stage 5)	4wd	CVT	6900	165	540/1000	POA
Arion 630 CIS / CIS+ (Stage 5)	4wd	24+24	6900	165	540/1000	POA
Arion 630 CEBIS (Stage 5)	4wd	24+24	6900	165	540/1000	POA
Arion 630 CMATIC CIS+ / CEBIS (Stage 5)	4wd	CVT	6500	165	540/1000	POA
Arion 650 CIS / CIS+ (Stage 5)	4wd	24+24	8000	185	540/1000	POA
Arion 650 CEBIS (Stage 5)	4wd	24+24	8000	185	540/1000	POA
Arion 650 CMATIC CIS+ / CEBIS (Stage 5)	4wd	CVT	8000	185	540/1000	POA
Arion 660 CIS / CIS+ (Stage 5)	4wd	24+24	8000	205	540/1000	POA
Arion 660 CEBIS (Stage 5)	4wd	24+24	8000	205	540/1000	POA
Arion 660 CMATIC CIS+ / CEBIS (Stage 5)	4wd	CVT	8000	205	540/1000	POA

DEUTZ FAHR

Agrotron 6 Series						
6155.4 PS	4wd	30+15	9700	156	-	140,150
6155.4 RC Shift	4wd	54+27	9700	156	-	149,370
6155.4 TTV	4wd	CVT	9200	156	-	168,510
6155 PS	4wd	30+15	9700	156	-	146,000
6155 RC Shift	4wd	54+27	9700	156	-	155,090
6155 TTV	4wd	CVT	9200	156	-	173,600
6165.4 PS	4wd	30+15	9700	163	-	143,850
6165.4 RC Shift	4wd	54+27	9700	163	-	152,770
6165.4 TTV	4wd	CVT	9200	163	-	171,790
6165 PS	4wd	30+15	9700	163	-	148,550
6165 RC Shift	4wd	54+27	9700	163	-	157,640
6165 TTV	4wd	CVT	9200	163	-	176,659
6175.4 PS	4wd	30+15	9700	171	-	149,120
6175.4 RC Shift	4wd	54+27	9700	171	-	159,530
6175.4 TTV	4wd	CVT	9200	171	-	178,930
6175 PS	4wd	30+15	9700	171	-	155,990
6175 RC Shift	4wd	54+27	9700	171	-	166,410
6175 TTV	4wd	CVT	9200	171	-	189,340
6185 PS	4wd	30+15	9700	188	-	165,460
6185 RC Shift	4wd	54+27	9700	188	-	173,280
6185 TTV	4wd	CVT	9200	188	-	196,459
6190 TTV	4wd	CVT	9200	192	-	218,270

FENDT

500 Vario Gen3						
516 Vario	4wd	-	-	171	-	155,390
700 Vario Gen6						
716 Vario	4wd	-	-	171	-	175,472
718 Vario	4wd	-	-	188	-	186,037
720 Vario	4wd	-	-	209	-	194,226

JCB

427 Agri	-	-	8,603	179	-	POA
437 Agri	-	-	9,605	195	-	POA
419S	-	-	6,695	195		POA
Fastrac 4160	4wd	CVT	7,000	160	140**	POA
Fastrac 4190	4wd	CVT	8,000	189	169**	POA

* Full turning tipping load for wheeled loading shovels ** Tractor PTO power

JOHN DEERE

6155M	4wd	20+20	7650	155/172	-	115,608
6155MH (high-clearance)	4wd	20+20	7650	155/172	-	130,699
6175M	4wd	20+20	9050	175/194	-	133,319
6195M	4wd	20+20	9050	195/216	-	140,535
6R 150	4wd	20+20	6400	150/177	-	144,421
6R 155	4wd	20+20	7650	155/203	-	149,953
6R 165	4wd	20+20	7650	165/213	-	164,054
6R 175	4wd	20+20	9050	175/223	-	168,497
6R 185	4wd	20+20	7650	185/234	-	174,936
6R 195	4wd	20+20	9050	195/244	-	182,016

McCormick X7

Kubota M7

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
KUBOTA						
M7-173	4WD 30F/15R PS or KVT 9,400 kg			170	N/A	€ 131,427
**FROM						
LANDINI						
7-165 Robo 6	4wd	30+15	9300kg	155 (165)	4cyl	143,500
7-170 Robo 6	4wd	30+15	9300kg	155(165)	6 cyl	152,548
7-175 Robo 6	4wd	30+15	9300kg	165(175)	6 cyl	147,316
7-175 V Shift	4wd	CVT	9300kg	165(175)	4 cyl	170,636
7180 Robo 6	4wd	30+15	9300kg	166/175	6 cyl	156,363
7180 V Shift	4wd	CVT	9300kg	166/175	6 cyl	179,683

Note: Engine Max Power = X and where available, boost = (X). Based on 50kph with front and cab suspension

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
MASSEY FERGUSON						
MF 6S Series						
MF 6S.155 Dyna-6	4wd	24x24/6	7100 / 8100 E	155	175	115,460
MF 6S.165 Dyna-6	4wd	24x24/6	7100 / 8100 E	165	185	119,700
MF 6S.180 Dyna-6	4wd	24x24/6	7100 / 8100 E	180	200	126,810
MF 6S.155 Dyna-VT	4wd	CVT	9600 kg	155	175	135,000
MF 6S.165 Dyna-VT	4wd	CVT	9600 kg	165	185	142,690
MF 6S.180 Dyna-VT	4wd	CVT	9600 kg	180	200	146,740
MF 7S Series						
MF 7S.155 Dyna-6	4wd	24x24/6	8100kg	155	175	120,830
MF 7S.155 Dyna-VT	4wd	CVT	9600kg	155	175	142,540
MF 7S.165 Dyna-6	4wd	24x24/6	8100kg	165	185	125180
MF 7S.180Dyna-6	4wd	24x24/6	8100kg	180	210	132050
MF 7S.165 Dyna-VT	4wd	CVT	9600kg	165	185	146890
MF 7S.180 Dyna-VT	4wd	CVT	9600kg	180	210	154060
MF 7S.190 Dyna-VT	4wd	CVT	9600kg	190	220	156760
McCORMICK						
X7.417	4wd	30+15	9300kg	155 (165)	4cyl	143,500
X7.617	4wd	30+15	9300kg	155(165)	6 cyl	152,548
X7.418	4wd	30+15	9300kg	165(175)	6 cyl	147,316


Deutz Fahr Series 6


Kubota M7173

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
X7.418 VT	4wd	CVT	9300kg	165(175)	4 cyl	170,636
X7.618	4wd	30+15	9300kg	166/175	6 cyl	156,363
X7.618 VT	4wd	CVT	9300kg	166/175	6 cyl	179,683

Note: Engine Max Power = X and where available, boost = (X). * CVT model 50K Air Brakes Full suspension

NEW HOLLAND

T7.210 RC	4wd	19+6	8255	165/208		€147,139
T7.210 PC	4wd	19+6	8256	165/209		€150,842
T7.210 RC	4wd	19+6	8257	165/210		€151,254
T7.210 PC	4wd	19+6	8257	165/210		€154,954
T7.210 AC	4wd	CVT	8257	165/210		€161,501
T7.225 AC	4wd	CVT	8257	180/225		€167,884
LWB						
T7.230 PC	4wd	19x6	8647	180/225		€195,462
T7.230 AC	4wd	CVT	8647	180/225		€210,069
T7.245 PC	4wd	19x6	8647	200/245		€203,542
T7.245 AC	4wd	CVT	8647	200/245		€218,159
T7.195 s	4wd	18+6	8647			€170,187
T7.215 s	4wd	18+6	8647			€178,126

VALTRA

N5 HiTech						
N155eH	4	30 x 30	7800	155/165	155	€ 115,459
N175H	4	30 x 30	7800	165/201	201	€ 119,173
N5 Active						
N155eA	4	30 x 30	7800	155/165	155	€127,564
N175A	4	30 x 30	7800	165/201	201	€129,979
N5 Versu						
N155eV	4	30 x 30	7800	155/165	155	€131,946
N175V	4	30 x 30	7800	165/201	201	€134,361
N5 Direct						
N155eD	4	30 x 30	7800	155/167	155	€139,424
N175D	4	30 x 30	7800	165/201	201	€141,839

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
T5 HiTech						
T145H	4	30 x 30	9500	155/170	155	€123,076
T155H	4	30 x 30	9500	165/180	165	€127,120
T175eH	4	30 x 30	9500	175/190	175	€134,569
T195H	4	30 x 30	9500	195/210	195	€147,837
T5 Active						
T145A	4	30 x 30	9500	155/170	155	€133,233
T155A	4	30 x 30	9500	165/180	165	€137,277
T175eA	4	30 x 30	9500	175/190	175	€145,775
T195A	4	30 x 30	9500	195/210	195	€161,619
T5 Versu						
T145V	4	30 x 30	9500	155/170	155	€138,931
T155V	4	30 x 30	9500	165/180	165	€142,975
T175eV	4	30 x 30	9500	175/190	175	€151,473
T195V	4	30 x 30	9500	195/210	195	€166,998
T5 Direct						
T145D	4	CVT	9500	155/170	155	€147,190
T155D	4	CVT	9500	165/180	165	€151,234
T175eD	4	CVT	9500	175/190	175	€159,732
T195D	4	CVT	9500	195/210	195	€175,257

200 HP+

CASE IH

Puma Mulitcontroller						
200	4wd	FPS18+6 50kph	10463	200	-	200,451
220	4wd	FPS18+6 50kph	10463	220	-	208,049
Puma CVX						
200	4wd	CVT 50kph	10463	200	-	222,486
220	4wd	CVT 50kph	10463	220	-	230,216
240	4wd	CVT 50kph	10463	240	-	236,583
Optum CVX AFS CONNECT SERIES						
250	4wd	CVT 50kph	11058	250		290,091
270	4wd	CVT 50kph	11058	270		300,242

“A good all-round tractor.”

“From a power point of view, it has plenty of grunt for the majority of our tasks that we need it to do, and will tackle most of our implements with relative ease.

As tractors evolve, you get to a point where you think there’s nothing that could be improved, then CLAAS will come out with something else that is designed to help even more.”

Anson MacAuslan, Estate Manager, Welbeck Estates, Caithness, ARION 420 Stage V, September 2021

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CLAAS

Massey Ferguson 6S Series

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
300	4wd	CVT 50kph	11058	300		315,417
Magnum AFS CONNECT SERIES						
310	4wd	23+6 or 19+4	11703	311		278,985
340	4wd	23+6 or 19+4	11703	340		283,195
400	4wd	PS 21 x 5	11703	396		315,211
Magnum CVX AFS CONNECT SERIES						
310	4wd	CVT	11703	311		298,091
340	4wd	CVT	11703	340		301,762
380	4wd	CVT	10,929	379		334,395
Magnum Rowtrac AFS CONNECT SERIES						
400	4wd	PS 21x5	10,929	396		410,523
Magnum Rowtrac CVX AFS CONNECT SERIES						
380	4wd	CVT	10,929	379		425,442

CLAAS

Axion 800 CIS / CIS+ (Stage 5)	4wd	24+24	9500	205	540/1000	POA
Axion 800 CEBIS (Stage 5)	4wd	24+24	9500	205	540/1000	POA
Axion 810 CIS/CIS+ (Stage 5)	4wd	24+24	9500	215	540/1000	POA
Axion 810 CEBIS (Stage 5)	4wd	24+24	9500	215	540/1000	POA
Axion 810 CMATIC CIS+/CEBIS (Stage 5)	4wd	CVT	9500	215	540/1000	POA
Axion 830 CIS / CIS+ (Stage 5)	4wd	24+24	9500	235	540/1000	POA
Axion 830 CEBIS (Stage 5)	4wd	24+24	9500	235	540/1000	POA
Axion 830 CMATIC CIS+ / CEBIS (Stage 5)	4wd	CVT	9500	235	540/1000	POA
Axion 850 CIS+ (Stage 5)	4wd	24+24	10200	264	540/1000	POA
Axion 850 CEBIS (Stage 5)	4wd	24+24	10200	264	540/1000	POA
Axion 850 CMATIC CIS+ / CEBIS (Stage 5)	4wd	CVT	10200	264	540/1000	POA
Axion 870 CMATIC CIS+ / CEBIS (Stage 5)	4wd	CVT	10200	295	540/1000	POA
Axion 920 CMATIC CIS+ / CEBIS (Stage 5)	4wd	CVT	10950	325	540/1000	POA
Axion 930 CMATIC CIS+ / CEBIS (Stage 5)	4wd	CVT	10950	355	540/1000	POA
Axion 940 CMATIC CIS+ / CEBIS (Stage 5)	4wd	CVT	11250	385	540/1000	POA
Axion 950 CMATIC CIS+ / CEBIS (Stage 5)	4wd	CVT	11250	410	1000	POA
Axion 960 CMATIC CIS+ / CEBIS (Stage 5)	4wd	CVT	11250	445	1000	POA
Xerion 4200 Trac	4wd	CVT	15400	462	1000	POA

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
Xerion 4200 Trac +	4wd	CVT	15400	462	1000	POA
Xerion 4200 Trac VC	4wd	CVT	15400	462	1000	POA
Xerion 4200 Saddle Trac	4wd	CVT	15400	462	1000	POA
Xerion 4500 Trac	4wd	CVT	15400	490	1000	POA
Xerion 4500 Trac +	4wd	CVT	15400	490	1000	POA
Xerion 4500Trac VC	4wd	CVT	15400	490	1000	POA
Xerion 5000 Trac	4wd	CVT	15400	530	1000	POA
Xerion 5000 Trac +	4wd	CVT	15400	530	1000	POA
Xerion 5000 Trac VC	4wd	CVT	15400	530	1000	POA

DEUTZ FAHR

Agrotron 6 Series						
6205	4wd	30+15	9700	207		174,230
6205 RC Shift	4wd	54+27	9700	207		187,150
6210 TTV	4wd	CVT	9200	216		230,150
6215	4wd	30+15	9700	226		180,890
6215 RC Shift	4wd	54+27	9700	226		193,890
6230 TTV	4wd	CVT	9200	230		237,350
6230 HD TTV	4wd	CVT	10000	230		255,120
Agrotron 7 Series						
7250 TTV	4wd	CVT	10000	247	-	256,379
7250 HD TTV	4wd	CVT	11100	247	-	268,329
Agrotron 8 Series						
8280 TTV	4wd	CVT	11100	287		298,299
Agrotron 9 Series						
9290 TTV	4wd	CVT	12000	295	-	310,120
9310 TTV	4wd	CVT	12000		-	316,210
9340 TTV	4wd	CVT	12000	336	-	328,470

FENDT

700 Vario Gen6						
722 Vario	4wd	-	-	228	-	202,368
724 Vario	4wd	-	-	246	-	212,423
800 Vario S4						
822 Vario	4wd	-	-	226	-	214,120
824 Vario	4wd	-	-	246	-	219,499
826 Vario	4wd	-	-	265	-	223,742
828 Vario	4wd	-	-	287	-	231,951
900 Vario Gen7						
930 Vario	4wd	-	-	296	-	267,938
933 Vario	4wd	-	-	326	-	278,182
936 Vario	4wd	-	-	355	-	286,247
939 Vario	4wd	-	-	385	-	293,995
942 Vario	4wd	-	-	415	-	297,565
1000 Vario Gen3						
1038 Vario	4wd	-	-	396	-	338,589
1042 Vario	4wd	-	-	435	-	348,426
1046 Vario	4wd	-	-	476	-	358,269
1050 Vario	4wd	-	-	517	-	366,144
Tracked Tractors						
900 Vario MT Gen2						
938 Vario MT	-			380		358,075
940 Vario MT	-			405		364,123
943 Vario MT	-			431		373,808
1100 Vario MT Gen1						
1151 MT	-	-		511		363,433
1156 MT	-	-		564		382,214
1162 MT	-	-		618		399,112
1167 MT	-	-		673		425,265

McCormick X7 Series

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT

JCB

435s	-	-	9,296	252	-	POA
Fastrac 4220	4wd	CVT	8,000	220	195**	POA
457 Agri	-	-	13,438	282		POA
Fastrac 8290	4wd	CVT	10,000	280	272	POA
Fastrac 8330	4wd	CVT	10,000	335	310	POA

* Full turning tipping load for wheeled loading shovels ** Tractor PTO power

JOHN DEERE

6R 215	4wd	20+20	9050	215/259	-	193,445
6R 230	4wd	IVT	9900	230/281	-	221,786
6R 250	4wd	IVT	9900	250/301	-	231,874
7R 270	4wd	e23	13010	270/297	-	263,479
7R 290	4wd	e23	13010	290/319	-	270,244
7R 310	4wd	e23	13010	310/341	-	281,127
7R 330	4wd	e23	13010	330/363	-	292,017
7R 350	4wd	IVT	13010	350/388	-	311,966
8R 280	4wd	16+5	9000*	280/308	-	260,463
8R 310	4wd	16+5	9000*	310/341	-	269,302
8R 340	4wd	16+5	9000*	340/374	-	284,106
8R 370	4wd	e23	9000*	370/407	-	308,098
8R 410	4wd	e23	9000*	410/443	-	322,461
8RT 310	Tracked	e23	8800*	310/341	-	380,944
8RT 340	Tracked	e23	8800*	340/374	-	402,823
8RT 370	Tracked	e23	8800*	370/407	-	416,838
8RT 410	Tracked	e23	8800*	410/443	-	430,707
8RX 310	4-track	e23	9000*	310/341	-	432,623
8RX 340	4-track	e23	9000*	340/374	-	444,226
8RX 370	4-track	e23	9000*	370/407	-	453,512
8RX 410	4-track	e23	9000*	410/443	-	469,062
9RX 490	4-track	18+6	9072	490/539	-	497,153
9RX 540	4-track	18+6	9072	540/594	-	525,623
9RX 590	4-track	18+6	9072	590/649	-	552,082
9RX 640	4-track	18+6	9072	640/691	-	568,881

Note: Tractor engine power ratings are quoted according to ECE-R24 (compact models) and ECE-R120 or 97/68/EC test standards at rated speed, and with Intelligent Power Management (IPM) where applicable. AutoPowr IVT transmission


CLAAS Axion 800

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT

also available on models from the 6090M to the 8R/RT 370.
*Lift capacity on 8R Series models measured at 610mm behind coupler, rather than max lift.

MASSEY FERGUSON

MF 7S.210 Dyna-VT	4wd	CVT	9600 kg	210	220	POA
MF8 S						
MF 8S.205 Dyna-7	4wd	28x28/7	10000kg	205	225	163,010
MF 8S.225 Dyna-7	4wd	28x28/7	10000kg	225	245	165,490
MF 8S.245 Dyna-7	4wd	28x28/7	10000kg	245	265	170,890
MF 8S.265 Dyna-7	4wd	28x28/7	10000kg	265	285	176,290
MF 8S.285 Dyna-7	4wd	28x28/7	10000kg	285	305	184,990
MF 8S.205 DynaE-Power	4wd	28x28/7	10000kg	205	225	175,390
MF 8S.225 DynaE-Power	4wd	28x28/7	10000kg	225	245	181,060
MF 8S.245 DynaE-Power	4wd	28x28/7	10000kg	245	265	186,730
MF 8S.265 DynaE-Power	4wd	28x28/7	10000kg	265	285	192,400
MF 8S.285 DynaE-Power	4wd	28x28/7	10000kg	285	305	197,400
MF 8S.205 Dyna-VT	4wd	CVT	10000kg	205	225	190,060
MF 8S.225 Dyna-VT	4wd	CVT	10000kg	225	245	195,460
MF 8S.245 Dyna-VT	4wd	CVT	10000kg	245	265	200,860
MF 8S.265 Dyna-VT	4wd	CVT	10000kg	265	285	206,660
MF 8S.285 Dyna-VT	4wd	CVT	10000kg	285	305	211,660
MF 8S.305 Dyna-VT	4wd	CVT	10000kg	305	305	214,060

New Holland T7

Fendt 724 vario complete with a pottinger front rear drill combination unit

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
MF 8700S Series						
MF 8727S	4wd	CVT	12000 E	270	300	202,940
MF 8730S	4wd	CVT	12000 E	300	330	209,690
MF 8732S	4wd	CVT	12000 E	320	250	216,440
MF 8735S	4wd	CVT	12000 E	350	370	227,920
MF 8737S	4wd	CVT	12000 E	370	400	233,320
MF 8740S	4wd	CVT	12000 E	400	405	237,670

NEW HOLLAND

T7.260 PC	4wd	19+6	8647	220/260	-	Sidewinder €211,625
T7.260 AC	4wd	CVT	8647	220/260	-	Sidewinder €227,844
T7.270 AC	4wd	CVT	10463	240/270		Sidewinder €235,935
T7 275 HD	4wd	CVT				€249,338
T7 290 HD	4wd	CVT	11058	710/288		€259,518
T7 315 HD	4wd	CVT	11058	300/313		€274,313
T8						
T8.380 UC	4wd	18+4	9130	311/381	-	€301,230
T8.380 AC	4wd	CVT	9130	311/381	-	€319,961
T8.410 UC	4wd	18+4	9130	340/409	-	€304,851
T8.410 AC	4wd	CVT	9130	340/409	-	€323,054
T8.435 AC	4wd	CVT	9130	380/435	-	€355,308
T8.435 UC	4wd	CVT	9131	380/436	-	€336,500
T8 Smart Track						
T8.435 AC ST	4wd	CVT	9130	380/435	-	€422,080
T8.435 UC ST	4wd	CVT	9131	380/436	-	€418,471

Note: E = electronic control CVT = infinitely variable

Make/Model	2/4wd	No of gears	Max Linkage	Engine HP	PTO (ISO)	Price Ex VAT
VALTRA						
T5 HiTech						
T215H	4	30 x 30	9500	215/230	215	€158,232
T235H	4	30 x 30	9500	235/250	235	€169,180
T255H	4	30 x 30	9500	250/271	271	€179,891
T5 Active						
T215A	4	30 x 30	9500	215/230	215	€172,014
T235A	4	30 x 30	9500	235/250	235	€182,962
T255A	4	30 x 30	9500	250/271	271	€193,673
T5 Versu						
T215V	4	30 x 30	9500	215/230	215	€177,393
T235V	4	30 x 30	9500	235/250	235	€188,341
T255V	4	30 x 30	9500	250/271	271	€199,052
T5 Direct						
T215D	4	CVT	9500	215/230	215	€185,652
T235D	4	CVT	9500	220/250	250	€196,600
S4 Series						
S274	4	CVT	12000	270/300	300	€243,206
S294	4	CVT	12000	295/325	325	€248,592
S324	4	CVT	12000	320/350	350	€262,692
S354	4	CVT	12000	350/380	380	€275,609
S374	4	CVT	12000	370/400	400	€286,372
S394	4	CVT	12000	400/405	405	€300,361


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MESSAGES:

- **Make a 'stop doing ' list for this year.**
- **'Seven laws for seven profits' policy**
- **Put your Management Tool Kit for the year in place**
- **Remember that your actions to reduce emissions will make you more money!**
- **Complete your health "Cheques"**
- **It is easy to grow more grass – follow the recommendations**
- **"We are unlucky; dairying has too many challenges now". Is that true?**
- **Get ready for spring tasks**
- **Use your Discussion Group to help you embark on the "new era".**

MAKE A STOP 'DOING LIST' FOR 2022

- These must be your New Year's resolutions.
- Most farmers are very undisciplined people. Because of their genetic energy levels, they live very busy lives.
- Someone told me year's ago to say "No" to many requests, especially those coming from yourself"
- The following few ideas might lead you to formulate your own 'stop doing list'.
  - "This year I won't work more than 10 hours per day or 56 hours per week",
  - "I won't milk more than 10 times per week"
  - "I will never get on a tractor to agitate or spread slurry"
  - "I won't do jobs my staff can do" – write them down.
  - "I won't leave a family chore, that I could do, to my partner" – list out specifically.
- The following are some of new year's resolutions that you never made but may implement if you don't prioritise the right things
  - "I will not take my children to school"
  - "I will never go shopping or to the cinema with my wife"
  - "I will not go on a two-week holiday this year"
  - "I will not join a discussion group"
  - "I will not do a farm plan"
  - "I will not get in help because it is too expensive"

SEVEN LAWS FOR SEVEN PROFITS

- Someone sent me this (by a Michael Lowe) as a reminder – I have modified it somewhat to fit farming.

1. Any business not constantly emphasising profit will ultimately make a loss or an inadequate income,
2. Any activity managed on the basis of technical criteria will be unprofitable.
3. Any business, system or procedure left undisturbed for three years will become inefficient,
4. Left to ourselves, people will elaborate rather than simplifying their solutions,
5. Because dairy farmers are generally over exuberant, they tend to have a "Reality Bias",
6. Nine-tenths of resources will be spent on tasks which have a minimal impact on profitability,
7. The optional extras will double the cost and the timescale for development.

- Therefore, use 5 per cent less, buy a 5 per cent cheaper product, then negotiate a 5 per cent discount and you have saved 15 per cen.
- Can you endeavor to apply/adopt 80 per cent of the principles outlined?

YOUR MANAGEMENT TOOL KIT FOR NEW YEAR

- Farmers, who are serious about staying in business and maximising profit, should use the following management tools as often as they would use a tractor the year!
  - Dairy Profit Monitor – if you don't know where you are financially; will you earn the income you require?

- Cost Control Planner – hugely important this year because of the huge increases anticipated in 2022,
- ICBF Milk Recording – an absolute must now,
- ICBF Herd Health Recording
- Grass Measure every week and record with www.Agri-net.ie or PastureBase through Teagasc.
- Breeding Chart, plus breeding plan.
- Condition Score Chart – must be done 5 times per year,
- Mastitis (Clinical) chart – all cases must be recorded, particularly important now with limited antibiotic use coming.
- Lameness Chart – must be recorded for the same reason,
- Fertiliser Programme/Nutrient Management Plan,
- Environmental improvement plan,
- Farm Safety Statement – it must be up-to-date.

- If you don't put these in place in early January, you won't use them during the year.
- Using these tools, I would be very confident that costs, a huge issue this year, can be kept under control by farmers who are willing and have good management capabilities.
  - The driver of profit from here on will be costs because milk price will fluctuate greatly from one year to the next.
  - You might say you haven't the time to do all this paperwork; well, you should make time because this "work" will, according to the experts, deliver you €60-200 per hour extra profit. The larger the farm the greater the profit benefit.
  - You should get in the FRS to do tractor and general work on the farm for €12-15/hr.
  - For sure, using these tools will leave far more profit in 2022 than driving a tractor around the farm.
  - Farmers who have a good Adviser should have these individual reports analysed and reported on. Then you, the farmer, should act on the recommendations.

ACTIONS TO REDUCE EMMISSIONS WILL MAKE YOU MONEY!

- Correct Lime, P & K:
  - If you correct soil pH, P & K you will release up to 80kgN/ha reducing, bag N by 50 units/acre.
  - Potential GHG emissions reduction will be 4-6 per cent
- Spread all slurry in spring:
  - This will mean a recovery of an extra 3 units N/1000 gallons,
  - Potential GHG emissions reduction will be 1-2 per cent.
- Spread slurry by LESS system:
  - This will result in the recovery of an extra 3units N/1000gallons
  - Potential GHG emissions reduction will be 1-2 per cent.
- Use Clover and mixed species:
  - This could replace up to 100kgN/ha
  - Potential GHG emissions reduction will be 5 -10 per cent.
- Use protected Urea:
  - Use it instead of Can
  - Potential GHG emissions reduction will be 7-8 per cent.
- Reduce chemical N:
  - A 25 per cent reduction in chemical N by better management practices:
  - Potential GHG emissions reduction will be 5 per cent.
- Extend your grazing season:
  - Every week you increase your grazing season will result in less meal and silage with more milk of higher % F & P.

- Potential GHG emissions reduction will be 1 per cent.
- Eat quality summer grass:
  - Grazing covers of 1400kgsDM/ha or appropriate for SR/ha leads to reduced meal feeding and Methane production,
  - Potential GHG emissions reduction will be 1-2 per cent.
- Feed less meal per cow:
  - By reducing meal levels by 50-100 kgs/cows, emissions are reduced,
  - Potential GHG emissions reduction will be 1 per cent.
- Increase your herd's EBI:
  - Every €10 increase in EBI will result in cows lasting longer, producing more Milk Solids from lower inputs and €20/cow more profit.
  - Potential GHG emissions reduction will be 1 per cent.
- Reduce electricity usage on your farm:
  - Effective pre-cooling (plate meter), a heat recovery system, variable speed vacuum and milk pumps and solar panels could save €10 – 40 per cow per year.
  - Potential GHG emissions reduction will be 1-3 per cent.
- Increase the number of trees and hedgerows:
  - They provide shelter for stock, a home for wildlife, can be a buffer to intercept P, sediment etc., and sequester carbon. One hectare of non-forest woodland/hedgerow can sequester one ton caron dioxide.
  - Potential GHG emissions reduction will depend on area.

HEALTH "CHEQUES" NOW:

- Called "cheques" rather than checks because there is money to be made in checking on animals during the house phase.
- At least 2-3 times per week walk through all animals in pens watching out for:
  - Animals not feeding when others are,
  - Lame or "tender" animals (remove from group and treat),
  - Empty animals (is she/he sick?),
  - Injury (remove from group immediately),
  - Bullying (take out the bully as they prevent resting and regular feeding),
  - Lice, coughing, scratching etc. (dose and/or treat),
  - Sore eyes,
  - Dribbling etc. (check for IBR and pneumonia),
  - Abortions (check if salmonella or lepto is the cause),
- Cows should be put through the footbath on three consecutive days once per month to prevent lameness,
- All vaccinations, where possible, should be done in January to reduce the workload in Feb-March,

- If you haven't vaccinated for Lepto, do it now. All breeding animals including the heifers for the bull this year,
- If salmonella scour was a problem in calves last year, vaccinate now - talk to your vet.
- Cows that are within 30-40 days of calving should get 100 grams/day of pre-calving mineral:
  - Ensure all cows are getting it, but March calvers will not need until late January
  - So, you need a wide feeding face and throw it on the silage twice a day (three times if feeding face is less than 1.5 ft/cow)
- The beneficial effect of the dry cow mastitis tube is now ending:
  - Cow is at greater risk of mastitis:
  - Stress must be minimised (each cow needs one cubicle) as her life is more stressed as she gets near calving.
  - Cubicle beds must be cleaned every day and passages must be cleaned 2-3 times/day.
  - Use lime, sawdust or chopped straw on the beds.
- Calving and calf houses must be "at the ready" for the imminent calving season start.

Clean, disinfected, and well-aired without draughts.
Have your calving jack, all back-up requirements in-place as well as all gates secure.

- Body Condition Score (BCS); You can't do much now about Feb calving thin cows, but fat (3.4+BCS) should be put on restricted/poor quality feed.
  - Yearling heifers should now be 47 per cent of their mature body weight or approx. 260kgs.
  - If less than that they can make 320 mating weight targets by now feeding 2-3kgs meal (18-20 per cent P) with good silage.
- But your own health is more important than all of these; because if you 'go down injured' all of these and more will become a nightmare to implement.
  - Therefore, go to your doctor now for a check-over,
  - Because surveys shown that over 70 per cent of farmers 'eat badly' and are approaching obese, it is vital to have put in place a procedure where you and your staff will have a good dinner, at least, during spring.
  - Also, wet gear and suitable spring clothing will be your saviour to keep you and staff 'going'.

EASY TO GROW MORE GRASS – FOLLOW RECOMMENDATIONS:

- We are only growing 40-50 per cent of the grass quantity we could and must grow on our farms due to:
  - Poor soil fertility – we should never again allow this excuse to enter the debate on farm walk, as it is too obvious.
  - Poor grass varieties,
  - Poor grassland and grazing management practices,
- An absolute necessity now is to get a soil test done on whole farm as next year is too late. Act on the recommendations. There is no point in complaining about big tax bills if your soil is deficient in the major nutrients.
- Nitrogen: From mid-January you must apply 23 units/acre (protected Urea is cost effective and emissions friendly) on farms where cows go out to grass 1 -15 February. Get this chore out of the way in January.
  - Because of N prices we must get more value out of slurry,
  - Apply N on the area of the farm to be grazed from 20th February to 17th March.
- Slurry spreading: Spread from 12th January to 31st January depending on your slurry storage zone.
  - Use the umbilical system – it is brilliant as you minimise roadway damage, soil compaction and you free up labour but never, ever spread more than 2500 gallons per acre.
  - Spread 33% of the grazing area (covers being grazed from 17 March) with 2500 gallons/acre of slurry now and no bag N,
  - If spreading your own slurry you must choose dry fields to avoid soil compaction as it reduces grass yield.
- Lime: There is no fertiliser more important than this and it gives best value for money. I don't know what words to use to get you to apply LIME – but you are wasting your time farming without having soil Ph 6.3+.
  - Every chance you get this year apply lime so that you have the whole farm at optimum pH by year end.
- Phosphorous and Potash: As a result of all the

environmental talk, many farmers don't know how much P & K. to use:

- As a basic requirement apply 2 bags 0:10:20 on grazing fields 3-4 bags 0:7:30 on silage fields (reduced with slurry use).
- For Index 1 and 2 you need more.
- Simple advice – act on it.

- When planning to spread fertiliser or slurry, use the weather forecast to be sure you have 2-3 dry days after spreading. Don't spread within 1.5 yards of a river, stream or well.
- On dry land, if you have a lot of grass, averaging 1000 – 1100, turn out the cows as they calve onto covers of 700 – 1000 kgs DM/ha. This will encourage more grass growth this year.

"WE ARE UNLUCKY: DAIRYING HAS TOO MANY CHALLENGES NOW"

- This was a recent comment made by a farmer's young sibling agricultural student interested in dairying farming! What do you think?
  - We now have Brexit, a serious price-cost squeeze, a serious environmental challenge driven by consumer demands, effectively new milk quota coming, climate changing, rising energy availability/cost, food security, rural decline, labour shortage and others.
  - "Yes, there are challenges in dairying, the same as always", so said her father.
- A quick recap on past challenges in dairy farming; but first let us put these in context to their background:
  - Farms were very small, 14 ha in 1916, increasing to 33 ha in 2010, mainly due to being tenants to British landlords.
  - The average cow herd was less than 10 cows, even in the 1960's
  - We were totally dependent on being able to sell livestock into the UK and all they wanted was cheap food.
  - Farmer attitudes were conservative and suspicious because of their backgrounds.
- The challenges of the past were:
  - Price – cost squeeze; always was and always will be there.
  - Animal health – diseases such as Brucellosis, TB, warble fly, calving problems, sick animal etc. were frequent issues which disasterous consequences for small farmers
  - Weather – the quality of the hay crop was totally dependent on it. Failure to save good hay' was a total disaster and was a frequent occurrence,
  - Milk quotas from 1983 to 2015,
  - High interest rates – up to 23 per cent

- The environment – many farmer prosecutions due river pollution over the years,
- Soil fertility – subsidies were there to encourage the spreading of lime, P and K
- You can compare the two list and there is very little difference between the challenges of the past and the challenges of present.
- Farmers did and will in the future have the resilience to overcome the challenges of the day.
- Now the young people entering dairying are highly qualified, are prepared to organise themselves to work normal hours, we have the best dairy research station in the world (Moorepark), we still have EU supports and markets available to us, animal health is now very good and there is very good independent advice available to farmers.
- Therefore, remember the present challenges are all manageable by the farmer.

GET READY FOR...

- Calving, by feeding minerals and meals if cows are thin. But make absolutely certain that cows or incalf heifers aren't getting too fat – restrict their intake.
  - Feed 2-4 oz per head per day of dry cow minerals to cows and heifers for 42 days before calving.
  - As cows must calve in body condition of 3.25 – 3.5, thin cows must get meal and fat cows must be on restricted silage.
  - As dry cow mastitis treatment is now wearing off it is essential that cows and particularly heifers are kept on clean beds to avoid early lactation mastitis.
  - List out your cows' expected calving dates in your diary and start to batch them,
  - Have the calving equipment and houses ready.
- Calf rearing by having the calf house clean, disinfected, well aerated, the calf feeding equipment at the ready, adequate calf rearing space, etc.
  - To avoid or minimise Johne's disease, "snatch" the calf from the cow, only feed colostrum from mother and feed milk substitute to replacement heifers. Don't feed bulk 'new' milk to replacements, but O.K. for males.
  - Buy a refractometer now to test colostrum quality.
  - Adequate colostrum is the most important calf rearing requirement,
- Milking, by servicing the milking machine.
  - This is the most important machine on every dairy farm, because it influences:
  - Milking time,
  - Udder health, particularly mastitis,
  - Milk yield.
  - Servicing can be a DIY job with some easy maintained machine, but you must know what you are at.
  - You must test the machine and act on the recommendations,
  - You should shop around for liners and rubberwear.
  - Add on units if shed is big enough so that you only have eight milking rows.
- Mastitis by keeping the animals' environment very clean and minimise feeding and bullying stress.
  - Move the 'expectant' cows into the calving area 7-10 days before and practice night time silage feeding.
  - If mastitis in heifers has been a problem teat seal them 4-6 weeks before calving.
- Long working hours by resting well and booking relief help for a few days per week.
  - Work hours are going to be 12-16 hours per day but get help before accidents happen due to tiredness and running from one job to the next.
  - Being tired will result in you being "cross, irritable, impatient, not able 'to think straight' and not respectful of family/employees/other farm visitors". Be honest; have you been like that? If in doubt ask your partner or another family member.
- To kill ragworth now by spraying in early January with MCPA or 24D

DISCUSSION GROUPS A LIFE SAVER FOR HEALTH & KNOWLEDGE

- Never before was your discussion group more important to you.
  - As there is a range of skills and ideas within each discussion group, you must ensure it works well this year to prepare you for the new era.
  - The biggest benefit of a Group is the opportunity it provides its members for friendship mental support and personal development.
- You should have had your AGM by now and be ready to roll before cows start calving.
  - Have an annual programme made out so that the Group easily functions for the year.
  - Any officer should not serve more than one year; because it is such a good training ground for shy or people who need to develop their communication and leadership skills.
  - A small sub-committee should decide on the annual programme and other tasks, having taken suggestions from all the members.
- Discussion Groups must move on to dealing with the "new era" requirements of dairy farming, listed above.
  - Business management
  - Staff and family management and training skills
  - Team decision making
  - Strategic planning
  - Dealing with environmental challenges
  - Managing personal health and stress
  - Whole farm analysis of farms visited is very beneficial
  - Good groups have a social element involving partners, nights out and trips away
  - Computer literacy is essential

I would like to wish a Happy New Year to the families of all my readers.

FROM THE CAB

The new Case Optum AFS Connect Series

The next generation of the Case IH Optum CVXDrive - a customer favourite since its 2015 introduction due to its compact yet high-horsepower and high-specification design – is now available in Ireland. The new Optum AFS ConnectTM series boasts a new cab, key changes to the interior and a connectivity package that includes the latest in technology offerings from Case IH. With rated outputs of 250hp, 270hp and 300hp, all with a CVXDrive gearbox, the new Optums are designed for operators who require efficient, high-power machines with high levels of cab comfort.

At the heart of the new Optum design is the upgraded cab in which several key areas of the interior have been completely reimagined. A new aluminium step arrangement allows easier access into the lighter and brighter cab, with a 7.5% volume increase from the previous Optum model and 11% more glass for enhanced all-round vision. Lowered rear fenders and wheel housings, the four-pillar cab design and full-length doors provide greater 360-degree visibility in addition to a 27% increase in cleared area from a new, low-mounted wiper design. Night visibility can be enhanced by LED road and work light packages with up to ten lights in the roof, four in the front of the cab, two on the rear fenders and six in the bonnet. A new cab suspension is equipped as standard enabling smoother operations. Additionally, the cab has now been trimmed with premium materials to provide a luxury feel and is exceptionally quiet with a noise level of just 65 decibels.

Productivity can be found at the push of a button with Case IH's intuitive operating concept, designed to maximise its ease-of-use for the operator. The updated multicontroller armrest has four hot keys that can be freely programmed with over 120 functions, allowing for highly personalised operating features, aided by a new dial encoder, quick access buttons and a new colour coded ICP key panel to simplify navigation and execution of tasks. A high resolution ISOBUS-compatible AFS 1200 multi-touch monitor offers excellent readability and functionality, helping the operator better execute a range of precision applications. In addition, it provides extensive customisability through a key control gateway to operate and optimise the CVXDrive transmission, the hydraulics and PTO. A new A-pillar display provides an overview of the most important information, without obstructing visibility.

The tractor is accessed and started with a new key fob that can be assigned to multiple tractors. Once the machine has started, operators can select their stored individual user settings and customisations through the AFS 1200 Pro display. Powerful climate control and improved airflow create a comfortable working environment, and a new, spacious cool storage compartment provides plenty of space for food and drink. An optional high-specification seat incorporating lateral suspension features full cooling and heating capabilities and has an upper swivelling backrest for smooth turning in the seat. In the field, a new drive pedal provides enhanced precision and control for slow-speed inching headland turns and high-speed travel.

For the first time in this Case IH tractor class, full AFS Connect

telematic capabilities accompany this new series as standard. With this wireless, two-way data transfer system between the tractor and the AFS Connect online management portal, tractor owners and farm managers have complete control over farm, fleet, and data management. Immediate, continuous, and secure tractor performance and implement operating data are easily accessible to the owner/manager through Case IH's online portal, enabling them to make more precise and quick management decisions. The AFS Connect package also allows, with permission, dealers to view the AFS 1200 Pro display in real time, which can provide more immediate support for any queries the operator has about the use of the display or the operation in general. Another advantage is dealer notification of early warning signs of a tractor fault, helping minimise the impact of any issues and keep the uptime of the tractor to a maximum, especially useful during peak working seasons. Additionally, under the AFS Connect Support PRO package, wireless updates for operating firmware such as that on the AFS 1200 Pro can be remotely updated, meaning operators can immediately benefit from new features, functionality, and enhancements.

Trips, tractors and trivia

Well readers here we go again: one year finishes and another begins – and the end of 2021 brought with it the disappointing news that we won't be travelling to Agritechnica in January as planned. The world's largest machinery show, which is like a toy shop at Christmas for us diesel heads, has been cancelled.

But let's not dwell on this news – instead why not browse our Tractor Buyers Guide inside this issue of IFM, which highlights what's new and on offer, model and spec-wise on the Irish market and much more besides. I want to thank every manufacturer for all their help in formulating this comprehensive guide.

Now, a little bit of tractor trivia: the history of the world's first tractors stretches back as far as the 1880s when petrol engines provided an alternative to steam, which had powered the farming revolution both in the UK and Ireland for almost a 100 years. The UK was the world leader in developing agricultural steam power and earliest records show that stationary steam engines were working on farms in both Wales and England driving threshing machines. The self-propelled steam engines came in to being in the 1840s. Their mobility and versatility opened the door for large scale farmers and contractors to become mechanised. Then the Americans kicked off in 1889 where the first tractor was built by the Charter gas engine company. John Charter design was simple; he took the wheels and transmission of the steam traction engine and married it with the single cylinder OTTO petrol engine. The OTTO engines were first built in Germany in 1876 and then we're produced in America from 1878. This inspired other manufacturers like the JI CASE company and, of course, the tractor built by John Froelich in 1892. John Froelich design and drive set the platform for what is today the John Deere brand and, as they say, the rest is history. Tractors are what powers the wheels of commerce on farms. They provide the power train to plough, till, sow, roll, cut the grass, bale the hay and feed the lots. They are an integral part of farming life and culture.

Over the last few years it's now fashionable to not be restoring a vintage car but a tractor, which has driven the price of the old relics sky high and with the popularity of 'TRICKED OUT TRACTORS' on BBC means that it has become a covid project for many a farmer and non-farmer alike.

As I pen this column the latest tractor figures to date in Ireland are showing close of business November 2021 that new tractors sales are at 2,345 units which is 24 per cent increase year on year and used tractor imports are up,34.5 per cent year on year with 3,528 registered. It will undoubtedly be a record year for both new and second hand units, something that we haven't seen since Celtic Tiger years and the year of 2008 when 4,531 new tractors were sold.

I know I am going to sound like a broken record again but I am going to say it: a tractor, be new or second hand, is a major cost on a farm so buyer beware. Please deal with your local dealer. Shop local where possible.

Until next month, farm wisely and farm safely.

PS As we go to press LAMMA announced its dates have moved from 11th-12th January to 4th-5th May 2022 in response to the evolving COVID-19 situation.

Massey Ferguson 210hp, MF 7S.210 powers into the top of the MF 7S Series

Massey Ferguson, a worldwide brand of AGCO (NYSE:AGCO), has announced that after the success of the recent launch of the MF 6S and MF 7S Series it is now introducing the new flagship 210hp, MF 7S.210, which further increases choice in this hard-working tractor sector. With its 210hp, 6.6 litre AGCO Power engine, 2.88m wheelbase and standard Dyna-VT transmission, the MF 7S.210 provides the perfect bridge to the 205hp, 3.05m wheelbase and 7.4 litre engine-powered MF 8S.205.

"Massey Ferguson strives to provide customers with exactly the right size, power and specifications to suit their requirements," says Thierry Lhotte, Vice President & Managing Director Massey Ferguson, Europe & Middle East. "Now, in the 200hp bracket, we offer the choice of the compact, but powerful MF 7S.210 or the larger frame, heavy-duty MF 8S Series. At the same time a choice of Efficient or Exclusive specifications help users to tailor the tractor to their specific needs," he adds.

The new MF 7S.210 offers the perfect power to weight ratio for the sector, delivering high performance, manoeuvrability and efficiency with a low compaction for fieldwork. At the same time the strongly engineered tractor's excellent, 14t Gross Vehicle Weight and 44.5t Gross Combination Weight are ideally suited to carrying heavy loads and for transport operations. In common with the MF 7S Series, the MF 7S.210 is designed for discerning professional operators, delivering the same high levels of strength, agility, automation and performance. Inheriting many features from the Tractor of the Year award-winning MF 8S Series, it also comes with new levels of comfort, control and convenience. Built on a 2.88m long wheelbase for optimum stability and traction, the MF 7S.210 is powered by a six-cylinder, 6.6-litre engine, which delivers high levels of concentrated power and torque. Robust engineering enables the tractors to carry and haul heavy loads on the road with ease and economy. Out in the field, its exceptional power to weight ratio delivers high

performance with great manoeuvrability and a light footprint to protect precious soils.
A range of automated features, straightforward controls and connected technology help enhance performance in a wide range of work.

Power to get the job done

Latest technology, clean AGCO Power 6.6-litre, six-cylinder engine delivers maximum power of 210hp and maximum torque of 860Nm for all applications. Engine Power Management (EPM) automatically boosts output up to 220hp and torque to 925Nm (at 1,500 engine rpm) for transport, PTO work and to meet high hydraulic demands – when it's most needed.

Top transmission is standard

Massey Ferguson's renowned Dyna-VT ECO, continuously variable transmission is standard on the MF 7S.210. Providing seamless speed shifts, it combines excellent control with economy – achieving 40km/hr at just 1,450rpm. A new Automatic Mode delivers smoother operation and greater economy. This automatically sets the optimum engine rpm according the load and speed, with straightforward operation by the foot pedal or Multipad lever.

Convenient comprehensive control

Both the Exclusive and Efficient specifications available for the MF 7S.210 include the new Multipad lever and comprehensive control armrest, linked to the seat. This easy to use, ISOBUS-compatible controller places everything conveniently to hand, including linkage control rocker switch, cruise settings, driving mode pre-sets and MF Guide activation. It also houses a micro joystick to operate two electric spool valves. A new, unique, multifunction lever option provides easy control of a loader and front linkage. As well as operating the spool valves, this also allows operators to change direction and tractor speeds.

Quiet, comfortable and cool cab

MF 7S.210 operators benefit from significant cab improvements, first introduced on the Tractor Of The Year award-winning MF 8S tractors, which include a new armrest, Multipad controller and enhanced connectivity.
Thanks to a new air conditioning system the cab is now up to 4C° cooler than before. Operators also benefit from a new, more comfortable, standard air-suspended seat. A heated seat option, with improved ventilation, is equipped with DDS – Dynamic Damping System with lateral stability suspension that responds automatically to the severity of the bumps.
All controls are easy to reach, arranged in a convenient and logical layout, with the new Multipad providing simple, comprehensive control along with a keypad for less-frequently used functions.

X7 SWB – the latest offering from McCormick

The new X7 SWB range with Stage V compliant engines thanks to the HI-eSCR2 (DOC+SCRoF) exhaust gas treatment system are one of the latest offerings from McCormick. The tractors are fitted with the new FTP NEF 45, 16-valve, 4.5-litre 4-cylinder engines and FTP NEF 67, 24-valve, 6.7-litre 6-cylinder engines with Turbo Intercooler and Common Rail electronic injection.

Models in the range include: X7.4 P6-Drive, available in X7.417 with 165hp and X7.418 with up to 175hp; X7.6 P6-Drive, available in X7.617 (165hp) and X7.618 (175hp) with 6 cylinders; X7 VT-Drive with 4 or 6 cylinders, available as X7.418 and X7.618, both capable of delivering up to 175hp thanks to the Power Plus system.

The innovative part of the engines lies in the fuel injection strategy, which leads to increased responsiveness, lower fuel consumption and improved emissions in all forms of movement. The engine installation is designed to have a wheelbase of 2,651mm for the 4-cylinder engine, offering greater stability during field and front loader operations, while maintaining manoeuvrability and versatility. The wheelbase of the 6-cylinder is 2,760 mm. Common to both models is a maximum allowed weight of 11,500 kg and a maximum rear wheel of 710/60R38, which offers greater stability and comfort during transport, less soil compaction in field operations and better traction and performance when working in soil engaging applications.

In terms of appearance, changes have been made to the 3,500kg front hitch, which improves design and operator visibility. Also, at the front of the tractor is the new one-piece bonnet, in line with the new McCormick family feeling, with a 90° opening angle for better and more immediate access, also for maintenance work.

There are two transmissions available: VT-Drive (for the higher powers) and P6-Drive (for all four powers in the range). The continuously variable, 4-stage VT-Drive with 4 sets of crown wheels and oil-cooled clutches guarantees first-class responsiveness.

New Landini Serie 5, excellence evolves

Landini is pleased to announce the launch of the new Serie 5 tractors, a range of utility tractors packed with comfort, versatility and performance. "With performance comparable to machines in a higher category, the new Serie 5 Stage V", comments Antonio Salvaterra, Marketing Director of Argo Tractors, "is perfect both for working in the open field and on the farm, performing any task with maximum efficiency and offering excellent operator comfort. The Landini brand has always been characterised by passion and innovation, which guide us along a path of research and development, designed and manufactured to meet the needs of every farm, with particular attention to the human factor and to style: a winning mix that has led to the Landini 5-120 Dynamic model being nominated as a finalist for the 'Tractor of the Year 2022' award in the Best Utility category".

Three models are available, powered by FPT F36 4-cylinder, 16-valve, 3.6-litre, turbo intercooler engines with Common Rail electronic injection, delivering up to 115 hp. Thanks to EGR/DOC/DPF/SCR technology, the new Serie 5 are Stage V compliant, meeting European regulations. The exhaust gas treatment system is integrated under the bonnet, thus safeguarding full visibility from the operator area. There are eight possible transmission configurations to meet every need: from the Speed Four 12 AV + 12 RM with mechanical reverse shuttle to the T-Tronic 48 AV + 16 RM with Hi-Medium-Low, hydraulic reverse shuttle and creeper. The Landini Serie 5 with hydraulic reverse shuttle can also be equipped with Park Lock, a mechanical transmission locking device that makes it possible to safely park the tractor even on steep slopes.

The further refinement of the transmissions further increases the efficiency of the tractor in terms of power transmitted to the wheels and lower fuel consumption. The Common Rail system delivers the exact amount of fuel required for reduced fuel consumption and improved performance. Also contributing to savings is the Engine Memo Switch system, which allows the ideal engine speed to be memorised and recalled for the implement in use. The 135-litre fuel tank and 13-litre urea tank ensure a long working range.

CLAAS ARION 400: Popular all-rounder gets Stage V update

The ARION 400 range of tractors from CLAAS have been given a makeover to mark the introduction of the Stage V emissions standard – a new design, a more powerful top-of-the-range model and CLAAS Power Management (CPM) to boost power in the ARION 440 and above. This model range now benefits from more hydraulic power, more lift capacity and a higher gross vehicle weight.

CLAAS has equipped its ARION 400 tractors with a range of new performance-enhancing features to mark the introduction of the Stage V emissions standard. Included in the range is a new, more powerful flagship model, the ARION 470, which has a maximum power output of 155hp. As before, the specifications available include low cab or the ground-breaking PANORAMIC cab options, plus either the CIS or CIS+ control systems. All models are equipped with 4.5 l four-cylinder Fiat Powertrain engines which incorporate the latest 4-valve technology and turbochargers with intercooling. Turbochargers from the ARION 430 upwards are also fitted with a wastegate. The Stage V aftertreatment system cleans the exhaust gases using an effective combination of SCRoF technology (Selected Catalytic Reduction on Filter) and a diesel oxidation catalytic converter (DOC). This means that the engines not only run cleanly, but are still highly efficient, with low diesel and low AdBlue consumption.

From the ARION 430 upwards, purchasers will have the choice between the 16x16 QUADRISHIFT or 24x24 HEXASHIFT powershift transmissions. The REVERSHIFT clutchless reverser enables easy direction changing using the shuttle lever on the steering wheel console and optionally also via the multifunction control lever on the right-hand armrest – particularly handy for front loader work.

SMART STOP is another convenient function designed to lighten the workload as it enables the transmission to be automatically disengaged when the brake is pressed and is re-engaged when the brake pedal is released.

The ARION 400 combines the benefits of a long wheelbase of 2.49 m (ARION 410 and ARION 420) or 2.53 m (ARION 430 – ARION 470) with a short overall length. Despite its compact dimensions, the robustly redesigned tractor guarantees safe transport of attached implements and exceptional stability for front loader work. This is partly down to its static 50:50 weight distribution without ballast but the gross vehicle weight has now been increased to 9.0 t, permitting payloads of up to 3.8 t. As on the previous series both the fully integrated front linkage and factory-fitted front loaders can be conveniently controlled by the multifunction control lever, with the option of also controlling the front loader by ELECTROPILOT (CIS or CIS+) or FLEXPILOT.

Lemken's latest offering

Seed drill combination for business pros

Minimal draught resistance, an integrated compact disc harrow, comfortable operation and a large, divided seed hopper – that is LEMKEN's new Solitair DT seed drill. With this machine, LEMKEN, the specialist for professional crop production, has completely restructured its range of trailed seed drill combinations, focusing all of its developments even more strongly on profitability. To ensure good reconsolidation in the first working step, the new Solitair DT features a leading tyre packer. For the second step of seedbed preparation, the Solitair DT is equipped with a compact disc harrow with relatively large 465mm diameter concave discs, that are individually protected against overloads by leaf springs.
If a reduced intensity of tillage is required, vertical corrugated discs can be used instead of the concave discs, which penetrate the soil less, reducing both moisture loss and the emergence of weeds. If targeted reconsolidation of seed rows is required, a trapeze packer roller can be attached behind the disc harrow.
At the heart of the Solitair's seeding technology are individual electrically driven, fertiliser-proof metering units, each of which supplies one distributor with seeds. The seed metering wheels are combined into seed wheel sets, eliminating the need to switch seed wheels on and off. The seed wheel sets can be changed without tools. The DT seed hopper holds a volume of up to 5,100 litres and is available in a dual hopper version. The dual hopper allows the Solitair DT to be used for combined seeding with fertiliser or for sowing different seeds.
LEMKEN's new Solitair DT will be launched in four and six metre widths for the 2022 autumn seeding season.

Steketee IC-Weeder

Hoeing technology becomes even more effective if the machine itself is able to distinguish between crop plants and weeds and works in a targeted manner as a result. This is where artificial intelligence (AI) comes into play. LEMKEN and Steketee are now introducing the automatic intra-row hoeing machine IC-Weeder in an AI-enhanced version which reliably detects crop plants. This machine is therefore able to create clean fields even in sown crops with extensive weed infestation within rows.
To achieve the goal of autonomous plant recognition, the software integrated into the IC-Weeder AI first needed to learn certain features of crop plants and then combine them to produce complex contexts in a second step. This is possible thanks to an algorithm based on the principle of "deep learning". For this particular machine, sugar beet plants were manually marked up at various stages of development. The algorithm then used this data to autonomously create a method for identifying sugar beet plants based on their colour profile, texture, shape, size and leaf position. This allows the hoeing machine to work even in challenging conditions that are too complex for conventional image recognition systems, as the system is able to differentiate clearly between crop plants and weeds.
In the Steketee IC-Weeder, the cameras for the individual rows are well protected and located inside a casing to ensure their reliable function without being affected by environmental light conditions. During a pass with the IC-Weeder AI, the cameras transmit 30 images per second to the on-board computer, producing a plant recognition ratio in excess of 95 per cent.
The IC-Weeder AI will be available from 2022, initially for sugar beets in a working width of 3 metres.

New Holland T6 Methane Power Tractor wins Sustainable TOTY 2022

New Holland Agriculture with the world's first production T6 Methane Power Tractor at the EIMA exhibition was crowned Sustainable Tractor of the Year 2022 – the prestigious award decided by the Tractor of the Year® jury. The jury panel of leading farm equipment journalists from across Europe singled out the T6 Methane Powered production tractor from shortlisted tractors in three main categories. The T6 Methane Powered Concept won in 2019 at Agritechnica the same title and at that stage was a concept at testing phase. Carlo Lambro, New Holland Brand President, commented: "We are very proud of receiving this title Sustainable Tractor of the Year Award again but for our production tractor. This is the culmination of New Holland's pioneering work on the use of alternative fuels through our Clean Energy Leader strategy, and it is a significant step forward on the path to decarbonizing agriculture. This award is a well-deserved recognition of the hard work and dedication of all those involved in the development of the T6.180 Methane Power tractor series, from our engineering teams to the whole Basildon plant team." First shown in 2017 and launched officially two years later, the T6.180 Methane Power features a re-engineered six-cylinder FPT Industrial NEF engine producing 175hp like its diesel-fuelled equivalent. Gas injectors and spark plugs replace the diesel injector, with the gas injected into each cylinder for constant, clean, maximised combustion. Compared to the limits allowed under EU Stage V emissions rules, carbon monoxide emissions

from the methane-powered T6.180 are 80% lower, while the level of non-methane hydrocarbons is reduced by 90%. Particulate matter is down by 98%, nitrous oxide by 62%, and CO2 by 11%. However, the T6.180 Methane Power has the same 175hp maximum power output with boost as its conventional cousin and produces maximum torque of 740Nm. Running costs are up to 30% lower, while less vibration.

Quaile Machinery host field event

In late November last we took a trip to north Co Dublin to attend a well-run tillage demo day held by Kenny Quaile and his team from Quaile Machinery based in Balcunnin, Skerries Co Dublin. Quaile Machinery was born off the back of the departure of a well-known dealer in the area. Kenny was service manager for this company and when it closed Kenny took up the job of looking after the existing customer base in the local area. Spotting an opportunity, he set up Quaile machinery and along with Ian Rooney things started to move quickly. The first agency in the door was Pottinger, followed by DeWulf, Scanstone and many more, with the latest edition being Deutz Fahr tractors. Speaking with both Kenny and Ian, the future is bright and their aim is to drive the business forward: "We aim to deliver a top-class sales service and repair to all our customers in the area." Below is some of the equipment demonstrated on the day.

Quaile Machinery have taken on the Deutz Fahr tractor agency for the North County Dublin Region. The brand is starting to gain traction in this area where high horse power is the norm.

Pictured at the open day was Ian Rooney, Sales Manager and Kenny Quaile, Managing Director, Quaile Machinery.

Team Pottinger Ireland: Paul Wilson, Territory Sales Manager; Ben Stokes, Territory Sales Manager; Raymond McCaffrey, Territory Aftersales & Promotions Manager; James Buckley, Territory Aftersales & Promotions Manager; and Diarmuid Claridge, Managing Director providing Quaile customers with all the latest in tillage equipment information on the day.

On display was the Pottinger 5m TERRADISC Harrow. This machinery has become very popular in this area where seedbed preparation is so important in the vegetable industry.

The show-stopper on the day was the new Pottinger pneumatic front hopper seed drill, the AEROSEM 5002 FDD, only recently introduced here. It has attracted a lot of attention owing to the fact that the weight is evenly divided front and back so less compaction and more seed and fertiliser can be transferred to the field in one go.

The old reliable and a firm favourite still here in Ireland amongst tillage farmers and contractors is the front and rear mounted unit. Pottinger showed the AEROSEM 3002ADD drill and power Harrow combination unit complete with front packer

Double victory for John Deere

The John Deere 7R 350 has been awarded Tractor of the Year for 2022.

European agricultural machinery journalists have announced the Tractor of the Year for 2022, with John Deere winning two awards. The 7R 350 AutoPowr model took first place in the overall Tractor of the Year category, while the 6120M AutoPowr received the Best Utility Tractor award.

In the main category, the John Deere 7R 350 AutoPowr tractor impressed the judges in all aspects of the very rigorous voting process:

- on-board technology and automation package;
- wide, spacious cab offering maximum quality and comfort;
- excellent field performance;
- high efficiency;
- ActiveCommand Steering (ACS);
- EZ Ballast weight system.

In the Best Utility Tractor category, the John Deere 6120M AutoPowr model scored highly with the following features:

- compact design and flexibility due to the short 2.4m wheelbase;
- high payload of 4.7 tonnes;
- latest precision farming technology;
- excellent suitability for front loader work.

Tractor of the Year is an international award programme that has been running since 1998. The jury consists of 26 leading agricultural technology journalists from 25 European countries. For the second year in a row, the awards were presented at the EIMA International agricultural technology trade fair in Bologna, Italy.

The John Deere 6120M is No.1 in the Best Utility Tractor category.

Custodians of the land

Tom Murphy
Professional Agricultural Contractors of Ireland

A few weeks ago Teagasc held a "Hedgerow Week" with the theme Understanding Hedges Better. There were a series of one-hour webinars in which PAC Ireland took an active part. The content of the webinars was excellent, with short videos and interviews hosted by Catherine Keena (Teagasc countryside Management Specialist). PAC Ireland has always supported Catherine's work and her vision and determination to protect wildlife and biodiversity, whilst improving the hedgerows of Ireland.

At a meeting just before lockdown, former Teagasc Director, Gerry Boyle, paid tribute to Catherine for a lifetime of work specialising in biodiversity.

Some years ago, in conjunction with PAC Ireland, Catherine and her colleague Tom Ryan established a training programme for agricultural contractors. It covered both the theory and practice of hedgerow cutting and participants completing the course received accredited certification. It was a tremendous success but seems to have fallen by the wayside. Going back centuries, hedgerows have been an intrinsic part of the Irish farm. However there is a right way and a wrong way to cut and maintain the different types of hedgerow in order to ensure biodiversity. Over the years farmers and agricultural contractors have worked together and have been successful in achieving this.

Sadly, most local authorities and state/semi state bodies that have responsibility for maintaining hedgerows just want a short back and sides, which Catherine maintains does nothing for the preservation of wildlife and biodiversity.

I am often asked when the hedge cutting course will be available again, as professional contractors are prepared to invest time and money to achieve accreditation. That said there must be a benefit for their investment. Local authorities and state/semi state bodies should be required to use only accredited hedge cutting contractors, who can advise on best practice. This would encourage farmers to do the same, not just for wildlife and biodiversity but as a good and reasonably cost-effective way to stock proof their land.

We have come a long way since the early 60s when Eamonn Ceannt, one of the early managers of Bord Failte, asked farmers to cut their hedges low so the influx of tourists travelling around Ireland could see into the fields. Each generation is only the custodian of the hedgerows of Ireland; let's be proud of what we pass on to the next generation.

New Year, new yearning for media balance

Almost certainly 2022 will be another year that presents us with a relentless stream of problems and challenges that will strain our capacity to meet and understand them. In terms of Irish family farming, we have arrived at a 'make-your-mind-up' moment: we either actively support commercial family farms or we are going to end up with hobby farmers at one end and factory-farm units at the other with nothing worth mentioning in between. That would be a disaster and it must be avoided.

We always try to be positive in ICMSA and we pride ourselves on looking for solutions as opposed to being hypnotised by the problems. But that desire to look for (A) problems to be correctly categorised and (B) solutions to be advanced based on that correct identification, is running slap bang up against a quite staggering level of ignorance in how the general media looks at farming and, specifically, in how it looks at farming and climate change. I don't know whether it's just genuine ignorance about what it is we do and why it matters – or whether it's something darker and more pernicious. All I know is that is the lack of real knowledge on display in so much of our media is quite staggering and would not be tolerated on any other subject on which commentators hold forth. Time and again, on both the State broadcaster and commercial stations, we have vaguely defined 'environmental activists' being given airtime to thrash farmers and, by extension, the rural economy and rural communities who depend absolutely on sustainable farming and food production.

This matters because our suspicion is that the negative media message is seeping into Government policy, and we need policy to deal with the realities of farming as opposed to 'sound bites' and virtuous posing. Workable and sensible policy could start with a declaration from the Government to the effect that farmers will be allowed to farm commercially at a scale that allows them to generate a reasonable income from farming. That's going to emerge as the 'bottom line' in 2022 and over the next few years – as far as ICMSA concerned it already is.

A related point on media coverage and the role played by these mysterious 'activists' and their equally mysterious NGO employers all pushing the anti-farmer agenda very hard. This kind of relentless campaign obviously involves significant funding. But nobody seems to know where that funding comes from. Nobody seems that interested in finding out either. ICMSA is over 98% funded by membership fees paid annually by our farmer members. At our AGM on December 3, I called for all NGOs on Government appointed Committees and Forums to reveal their sources of income. Why would that be a problem?


Pat McCormack
President, ICMSA

The Cabinet's signing-off and the submission of the CAP Strategic Plan to the EU Commission looked and felt premature as across a range of issues. In our opinion, the plan is demonstrably incomplete and unsupported by either the data or the farming community, thousands of whom are facing considerable losses under the proposed plan.

The CAP Strategic Plan does not represent the best that could have been achieved. It needed more work and certainly ICMSA was willing to put that in, but this hurried schedule is in keeping with the whole atmosphere around our CAP which stressed more appearance than substance. It's never going to be good enough to simply take a roadshow around the country's marts explaining your position if there's no real attempt at listening and acknowledging where people have real problems and are suggesting real solutions.

Whether it is convergence to organics to the original choice of Eco-schemes and on to the woefully underpowered Dairy Beef Calve scheme, there was a rushed feel to the Irish plan that meant that really glaring anomalies and errors had to be either 'fixed on the fly' or simply go unchallenged.

There is so much wrong with this CAP Strategic Plan that farmers were nearly confused about where to start. To a certain degree – and as we have said before - much of this arises from the kind of unworkable retrofitting that happens when you try and repurpose a farming and food subsidy system into an environmental and climate change tool. But so much of what is wrong and has now gone forward could and should have been picked up and dealt with if we had had a proper and responsive system of engagement and listening. What we got instead was a briefing that just announced what had been decided. The consultation and engagement was very disappointing and the result is a flawed CAP for Ireland that will undoubtedly undermine our family farm model of farming.

ICMSA intends engaging with the EU Commission in the coming months of 2022 to try and ameliorate the aspects of the plan deemed most damaging to Irish farming.

Protect yourself at calving time

Ciaran Roche, FBD Risk Manager, offers some safety advice for the calving period.

The Health and Safety Authority's "Review of Work-Related Fatalities in Agriculture in Ireland 2011-2020" identified that 208 fatalities occurred in the agricultural sector. There were 495 work related fatalities between 2011 and 2020 which means that Agriculture accounted for almost half of the work related deaths. 37 (18%) of these fatalities involved incidents with cattle. The most common incidents involved attacks by cows with calves (13 or 35%), the victim being knocked over by cattle without aggression (9), or attacks by bulls (6). Most victims of work-related fatalities involving cattle were older people, with 70% being aged 65 years or older. At this time of the year it is important to remember that cows at calving time can be particularly dangerous. FBD's Risk Manager, Ciaran Roche, looks at appropriate safety measures which can be implemented to protect yourself from cow attacks during this period.

Protect Yourself at Calving Time

Cows at calving time can be nervous, agitated, excited and aggressive. This is true of even animals that are normally very docile. Particular caution is required if pre or post calving dangerous behaviour warning signs are identified, but always remember that any cow at calving time can have a sudden change of behaviour. The calving facility should be well designed, have a calving gate, provide adequate space, be tidy, well-bedded with clean dry straw, free of obstructions and provided with good lighting. A well-designed calving pen should minimise the direct physical contact between the cow/heifer and the farmer. The pen should be designed so as to allow the calving gate pivot from a pillar at the front of the pen beside the head-gate, as this provides protection to the farmer as it rotates inwards, rather than having to enter the pen with a cow to manoeuvre her into a calving gate. When calving cows/heifers ensure they are safely secured in a fully operational calving gate. It is essential for the farmer to establish an adequate physical barrier between themselves and the cow. Never turn your back on a cow following calving. Always ensure that there is help at hand and keep children away. If appropriate a calving jack should be used, as this can reduce the risk of back injury. Remember that all cows will be protective of their new-born young and potentially very dangerous. For example when a calf is being tagged they often bawl and this may cause the mother to attack in an aggressive and protective manner. With this in mind ensure the cow is securely isolated when tagging their calf. Cows generally become very agitated directly after calving. After a cow calves, leave the cow and calf alone for 30 minutes to bond. This will allow the cow time to calm down. If calving aggression lasts for more than a few days, cull the cow after calf is weaned as aggression is a genetic trait. If it is necessary to assist a weak new born calf with suckling, safely put the cow in the calving gate and assist the calf to feed or alternatively feed it colostrum using a bucket with a teat.

Cattle Handlers

It is important that cattle handlers are experienced, competent, and sufficiently agile for the class of livestock being handled. Good stockmanship skills will ensure that stress to cattle is minimised, that they are handled safely and this in-turn will reduce the risk of injury to the handler. The demeanour of cattle usually gives a hint as to their state of agitation, it is essential that you recognise and watch out for danger signs such an aggressive/agitated head or tail positions, bellowing and pawing the ground. Additionally it should be ensured that there is enough people at hand to carry out the task safely.

Facilities

Well-designed handling facilities are essential for safe handling of all cattle. Facilities should include securely fenced fields, good holding pens, suitable cattle crush, sculling gate, calving facilities and bull handling facilities. Not only will good facilities make the job safer but it will also make it easier to carry out the work in a more efficient manner. If cattle are located on an out-farm, strongly consider investing in good cattle handling facilities for that location.

Stop Taking Risks! Always Think Safety First

REVOLUTIONARY

CHANGE IN RURAL IRELAND

Dr Mícheál Ó Fathartaigh examines the revolutionary development of Irish agriculture and rural Ireland.

Many historians quibble at the description of the Industrial Revolution as a 'revolution'. Although they do not dispute that during the Industrial Revolution huge, revolutionary, changes happened in Europe's economy and, by extension, in European society, they argue that the use of the term revolution implies that these changes also happened very quickly, which they did not. Beginning in the 1700s, the Industrial Revolution happened over the course of a few centuries. Industrial Evolution would, indeed, connote a more accurate sense of how things actually, gradually, transpired. Industrial Evolution, and other, alternative, titles, would fail, though, to convey just how dramatic the socio-economic changes to Europe from the 1700s were and so historians persist, consequently, with Industrial Revolution.

If Irish historians were to turn their collective attention to the history of Irish agriculture and rural Ireland in the twentieth century (and we can only hope that one day they will), they would see that the changes that happened here in the twentieth century could be more accurately described as revolutionary. The changes were both huge, with parallels to what happened during the Industrial Revolution, and they also happened remarkably quickly, over the course of a few decades.

The Industrial Revolution made one of its biggest impacts in manufacturing. During it, primary materials were extracted like never before and they were fashioned like never before, into sundry products and on a mass scale. At the start of the twentieth century, agricultural production in rural Ireland was, relative to the rest of Europe, modest and inefficient. Irish farmers increasingly owned their farms, as the process of land transfer from the landlords progressed, but they derived little more than their ancestors had from their primary material, grass; and neither were they producing new products on a greater scale than their ancestors. In their absolute defence, rural Ireland was still reeling from the Great Famine of 1845–9 and this was to be expected. In order for change to occur, and for Irish farmers to realise the potential of their newly acquired farms, they needed help. Thankfully, help was at hand, and it came in the form of the advisory service.

That peerless visionary for the modern development of rural Ireland, Horace Plunkett, had recognised that owing to the agricultural potential of rural Ireland, Irish farmers would benefit tremendously from an expert agricultural consultancy service. Duly, he lobbied the British government for the establishment in Dublin of a department of agriculture that would endow such a service. The British government responded and in the early 1900s a nationwide advisory service was inaugurated. Not immediately, but rapidly Irish farmers, working with instructors, began to farm much more expansively and much more efficiently, and, conspicuously, much more in line with their European counterparts. There was a definite sea-change and its pivot was fast.

As well as an exponential growth in manufacturing, one of the hallmarks of the Industrial Revolution was innovation. Throughout the Industrial Revolution, entrepreneurs kept

coming up with new ways to better exploit primary materials and to keep driving forward. The revolutionary development of Irish agriculture and rural Ireland in the twentieth century was likewise catalysed by scientific innovation. Initially, from the mid-twentieth century, soil scientists and, soon afterwards, scientists engaged in research across the agricultural-science spectrum began to provide Irish farmers, via the advisory service, with new insights regarding how best to cultivate their land, improve their livestock, etc. These scientists were institutionalised as An Foras Talúntais in 1958 and Irish farmers became part of an agricultural knowledge and innovation system that was then, and remains today, the most integrated in Europe. The inspiration had come from the United States, which had pioneered this system, and which had promoted in

Ireland through its Marshall planners, who had been based in Dublin following the Second World War. In the US, however, the system had been implemented incrementally, from the middle of the nineteenth century, whereas in Ireland it was introduced within one generation.

When it came to the Industrial Revolution, dynamic, innovative, manufacturing was one thing but if there had not been markets for the products that were manufactured then there would have been no Industrial Revolution. As it was, the countries where the Industrial Revolution took off, Britain in particular, had readymade international markets as a result of having empires. For most of the twentieth century, Ireland was in no such position. Indeed, because of prevailing restrictions on international free trade, even after Irish independence in 1922 rural Ireland had virtually no option but to continue to sell its agricultural products exclusively in the British market. In this context, the strides towards expansive, efficient and innovative farming were trammelled. Fortunately, by the 1960s, though, the European Economic Community, and access to its international common market – not to mention its financial supports for agriculture – was already on the horizon. Once Ireland joined in 1973, rural Ireland had the international market that it needed to complement the strides that it had made in its ability to produce, and the circumstances for revolutionary change had all coalesced nicely; and within only a short period of time.

There were other factors that fostered revolutionary change as well. Independence had given Ireland full autonomy in agricultural policymaking and successive Irish ministers for agriculture had contributed to setting the tone for revolutionary change. Chief among these was the first minister, Patrick Hogan, who brought forward a blueprint for the development of the dairy industry that laid the foundations for today's success in this area. In addition, developmental organisations, like Macra na Feirme, emerged in rural Ireland during the mid-twentieth century and so, moreover, did the farmer representative groups, like the Irish Farmers' Association and the Irish Creamery Milk Suppliers' Association. These played a major part in shaping the agricultural policymaking of successive Irish governments in such a way that they continued to underpin revolutionary change. Rural Ireland in the 1920s and rural Ireland in the 1970s are incomparable, and only revolutionary change could be responsible for that.

Dr Mícheál Ó Fathartaigh is author of Developing Rural Ireland: A History of the Irish Agricultural Advisory Services (Wordwell Books, 2021).

The Merkel legacy

2021 saw the departure of Angela Merkel after a long and illustrious political career as leader of Germany. She has received great praise for her fourteen-year tenure as German Chancellor. Her upbringing under the communist East German regime until 1989 did not prevent her from embracing a democratic united Germany and actively participating in that democracy. That alone is no small achievement given the repressive nature of her early life under communism. Another noteworthy aspect of her political life was the ability to ensure that a united Germany continued to prosper under the free market, capitalist economy developed by West Germany since World War Two. Frau Merkel's commitment to the European Union and its ideals is unquestionable and her courage in recent years in facing down those who would completely close the EU and Germany's borders to African and Middle-Eastern immigrants is to her credit.

Some other policy initiatives over Angela Merkel's long chancellorship are not as positive or far-seeing. Decisions taken in regard to closing Germany's nuclear power stations must now be seen as, at the very least, premature. It was a knee-jerk reaction in response to heightened public fear around nuclear energy. This policy, in tandem with the ongoing winding down of Germany's coal mines, has left the country increasingly dependent on imported energy. The fact that a large portion of that energy deficit consists of imported Russian gas is, or should be, a cause of great anxiety in Europe. It is difficult to criticise Russia's increasingly bellicose stance towards Ukraine and at the same time be heavily dependent on Russian gas imports to power the German economy. Like it or not that is a political legacy that Angela Merkel has bequeathed to her successor. There are several considerations that merit analysis. Nuclear power still offers a clean, relatively safe and environmentally positive energy option into the indefinite future. Scrapping such technology for political populism was unwise. While coal is not an environmentally acceptable fuel for the future, it is affordable, abundant and efficient in providing energy until renewable and affordable alternative energy sources are developed sufficiently to replace it. Neither Germany, the EU or the rest of the world is there yet.

Even in Ireland there is a belated and begrudging realisation that closing the Moneypoint coal-fueled power station prematurely would be catastrophic for the Irish economy. Decisions taken to ban oil exploration may yet be regretted. Oil and gas deposits are often found in close proximity. Banning oil exploration but allowing gas exploration is a non-runner for any savvy explorer. Without new sources we will run out of any indigenous gas source by the end of the decade at the latest. By then, the complexity of converting our economy entirely to renewable energy sources on a short timescale will have been fully realised. We will then be totally reliant on imported energy sources to make up still significant shortfalls and outages in renewable energy production. We live on a small island on the edge of the European continent. We are at the very end of a very long gas pipeline stretching from Siberia to Ireland and passing through any number of energy-hungry countries on the way. Does anyone realistically think that we will not be the first to suffer from political or infrastructural disruption to that gas flow? We have still not accepted the necessity to at least spread the risk to gas supply by building an LPG storage facility in the Shannon Estuary, allowing us to import gas from other sources across the globe. If it were only political ineptitude or indecisiveness that prevents timely actions being taken it would be somewhat forgivable. If it is unrealistic ideology at work, that is utterly unforgivable.

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SIGNPOST
Farmers for Climate Action

SIGNPOST

Farmers for Climate Action

The Signpost Programme is a collaborative programme to lead climate action by Irish farmers and support the transition towards more sustainable farming systems

The main objectives of The Signpost Programme are to:

- Reduce greenhouse gas emissions
- Reduce ammonia emissions
- Reduce nutrient loss to the environment and contribute to improved water quality and biodiversity
- Save farmers money and improve efficiency of production systems

Open the camera on your phone & scan the QR code to find out more!

The Signpost Programme is a collaborative partnership of farmers, industry and State Agencies, working together for climate action.

For further details of the partners please refer to
www.teagasc.ie/signpost

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