

IN THE **MIX** MAGAZINE



**FORGING AHEAD
WITH MECHFIBER+**

4th GEN CONTROLLER

NEW FARM ECONOMICS

EMPLOYEE SPOTLIGHT

KEENAN[®]
an **Altech** company

ISSUE 6
2022



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WELCOME TO IN THE MIX

Welcome to the sixth edition of our magazine. For more than 40 years now, the KEENAN brand has been synonymous with the manufacture of robust and reliable diet feeders for farmers across the world. During that time, the company has undergone many changes, from offering nutritionist support (known today as InTouch) in the 1990s, to joining the Alltech family of companies in 2016.

Today, KEENAN continues its collaboration with thought leaders in the industry to bring innovative solutions forward for the challenges faced in agri-business. The focus is on giving farmers the courage and tools to embrace new technologies and new ways of thinking.

In this issue, we look at some of the new developments we have made over the past months, including the launch of the MechFiber Plus range of diet feeders and the new technologies that we have brought to market. In our continually changing landscape, we hope these changes help farmers mitigate the unpredictability of income through the constant returns resulting from precision feeding.

We also have our usual features; employee spotlight, images from around the world and a maths quiz (for young and old to attempt!).



Enjoy the magazine,
Matt Higgins

WELCOME TO IN THE MIX

KEENAN launch the MechFiber+ range

– the first complete overhaul of the entire range ever undertaken

Beginning with the end in mind

The most vital part of any new design process is to 'begin with the end in mind'. This means starting the design journey by consulting with the end-user. When developing the new KEENAN MechFiber+ range, the engineers at KEENAN quickly realised that their customers would only settle for changes that did not affect the overall robustness, simplicity and consistent mix quality of the current range. This was going to involve some thinking outside the box!

Currently, KEENAN has more than 20,000 users in over 80 countries around the world. KEENAN discovered from speaking to farmers that the consistency and thoroughness of the mix quality were sacrosanct. The design of KEENAN's unique paddle system means that it is the only machine in the world to produce and replicate the MechFiber mix time and time again. This mix improves herd health, productivity and helps farms reduce methane emissions through increased feed efficiency.



Where details matter

With this in mind, the KEENAN engineers studied every intricate detail of the internal mechanical design and further enhanced the mix quality by adopting new paddle castellations. The paddle castellations were re-shaped to give a rounded top section, and the rake angle was increased, allowing greater material movement in the chamber. This resulted in less material residing on the paddles, which meant less friction, meaning less wear on the machine. Overall, the mix was even better with reduced horsepower requirements.

Externally, too, there are improvements in the design. Lights have been added to the feed-out door to enable farmers to see better when ambient lighting is low. Typically, feeding is done in the early morning or late evening, in low-light conditions. Specially moulded durable black pods house these new lights. Farmers can also opt for an increased-length (by 400 mm) feed-out door, which provides a faster feed-out time.

Aesthetically, the range has been given a fresh look with specially moulded black pin seal matt finish front covers. The rear ladder also comes in a black finish and is made from sleek tubular steel that is less prone to damage, more user-friendly and collapsible.

“ The lifespan of a KEENAN stretches across decades ”



“ Our research shows that new users of a KEENAN can reduce methane by **10% per litre** of milk produced. ”





Cutting edge technology

Advancements in technology further enhance the art of engineering and innovation. The new fourth-generation KEENAN Controller, feed management app and InTouch platform won the Enterprise Ireland Innovation Award in September 2021. These technologies give the farmer full oversight and control of all farm data at the touch of a button. The new Controller also can include key visual telematics of the machine mechanics, such as oil and temperature sensors and a myriad of other useful data.

“The **KEENAN diet feeder** was the **first in the world** to be validated by the Carbon Trust as helping to **reduce emissions on-farm,**”

Matt Higgins, general manager at KEENAN, is also conscious of the green credentials of the KEENAN.

“The KEENAN diet feeder was the first in the world to be validated by the Carbon Trust as helping to reduce emissions on-farm,” Higgins explains. “Our research shows that new users of a KEENAN can reduce methane by 10% per litre of milk produced.”

Ollie O’ Neill, head of Machine Innovation at KEENAN, said, “The lifespan of a KEENAN stretches across decades, and the new plus range has been carefully designed to ensure that KEENAN stays at the forefront of the market.”

Beginning with the end in mind has allowed KEENAN to improve productivity, efficiency, sustainability and customer experience.





NEW FARM ECONOMICS

Using efficiency to drive profitability during uncertain times

Unprecedented increases in farm input prices, mainly feed, fertiliser and energy, have created a lot of concern for farmers throughout Europe. Predictions made early in the year have been further revised due to the conflict in Ukraine and its financial and supply repercussions. However, while farmers are worried, there is a lot of contrary evidence suggesting that they should be very optimistic too.

Milk price and beef price increases

Dairy farms have seen milk price reach over 60c per litre (c/l) base price, with some farms receiving over 70c/l based on their solids. The milk price in 2022 will be up to 30% higher than in 2021, and with milk production costs increasing by 30% compared to 2021 levels, the average dairy farm will see its net margin retain similar levels to 2021. This is according to the updated document from Teagasc on the

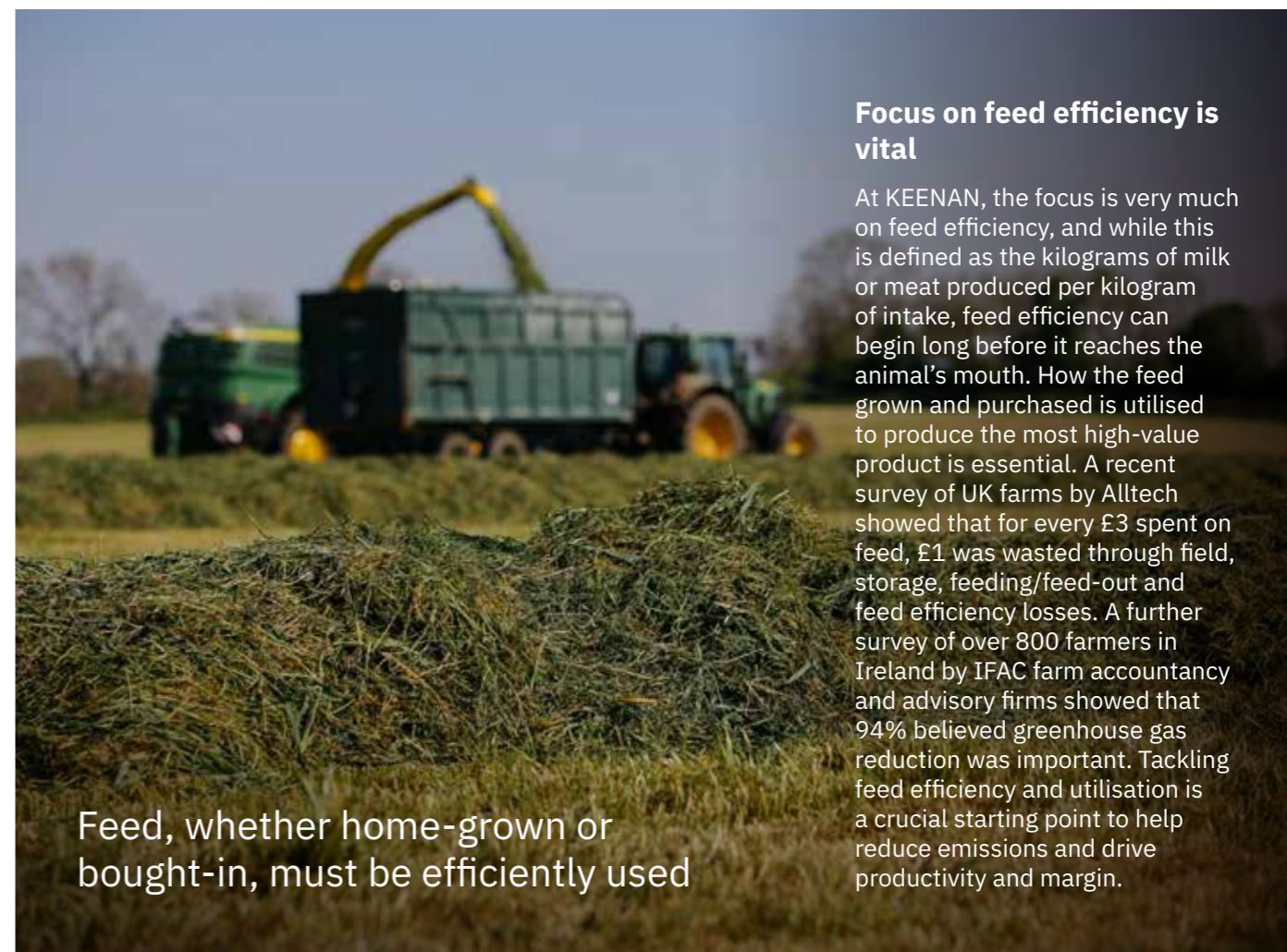
situation and outlook for Irish agriculture produced in April.

There is a similar story for beef farmers, with a 12% increase in price in 2021 being further supported by an additional 16% increase in 2022 for the price of finished cattle. This is being driven by strong retail demand for product, as well as increased EU exports. While this is tempered somewhat by an 11% increase in overhead cost, the gross margin on beef finishing farms is predicted to be the same as 2021 levels.

Increasing costs and maintaining margins will always be a concern for any business. In a year like 2022, we need to focus keenly on these areas. While we all have an opinion of what they should be, farmers are generally price takers regarding input and output prices. Managing how farmers utilise these inputs while maximising

output and the quality of these outputs is all about driving efficiency on-farm and should be a key defining focus for margin.

Some farmers are receiving 70c/litre based on their solids



Feed, whether home-grown or bought-in, must be efficiently used

Focus on feed efficiency is vital

At KEENAN, the focus is very much on feed efficiency, and while this is defined as the kilograms of milk or meat produced per kilogram of intake, feed efficiency can begin long before it reaches the animal's mouth. How the feed grown and purchased is utilised to produce the most high-value product is essential. A recent survey of UK farms by Alltech showed that for every £3 spent on feed, £1 was wasted through field, storage, feeding/feed-out and feed efficiency losses. A further survey of over 800 farmers in Ireland by IFAC farm accountancy and advisory firms showed that 94% believed greenhouse gas reduction was important. Tackling feed efficiency and utilisation is a crucial starting point to help reduce emissions and drive productivity and margin.

First-time KEENAN users can gain €30,800 in their first year

KEENAN offers a combination of technology and advisory nutrition support to drive feed efficiency and utilisation on-farm. According to the IFAC survey, only 32% of farms currently use technology to increase farm efficiencies, with 52% mentioning cost as a barrier. With all investment, there needs to be a return, and first-time users of KEENAN technology increased their feed efficiency by 11% through improved productivity and reduced feed costs, resulting in an extra €308 per cow per year (€30,800 for a herd of 100 cows, based on a milk price of 40c/l).

Additionally, all adoptions of technology take on some complexity, and the InTouch nutrition service is there to guide farmers along the way. The service shows farmers how

to use the technology and advises on management best practices to get the most from the system. With all new technologies, there also comes a fear of having to change systems. This is not the case, as most customers continue to maximise grazed grass intake with similar levels of supplementation. Supplementation may be utilised differently, and there is a greater focus on maximising home-grown forages.

First-time users of the KEENAN system gained €308 per cow in the first year





Accuracy is key

The system maximises the use of quality home-grown feeds, including grazed grass. Accuracy of mixing and the precise delivery of what the cows need are key features of KEENAN through its first-class engineering, in addition to the KEENAN controller guiding the operator through the correct loading sequence. This is the cornerstone of any profitable system. Results from InTouch for over 1,200 farms show that the top farms can load their mixer with 0.3% accuracy, with each further 1% inaccuracy costing the average farm over €2,500. Some farms showed 20% inaccuracy, potentially costing €60,000 per annum.

Inaccuracy in loading can end up costing up to €60,000 per annum

Using straw in the diet has huge cost benefits

Straw has also been synonymous with KEENAN diets, especially for dry cows. Together with other management features of the high fibre, low energy diet, it can reduce metabolic issues around calving by 50–80%, resulting in veterinary savings of €51 per cow. This year when feed is more expensive, and the cost of silage production has increased by 40–50%, the utilisation and handling of straw can reduce feed cost of dry cows by 30-70c/cow/per day.



Using straw can reduce feed costs by 30-70c/cow/per day.

No one understands mixing like KEENAN

The unique engineering features of the KEENAN also allow for the processing of by-products. Once regarded as waste, this feed can now be incorporated into the diet. Currently, 15,000 tonnes of by-products are being processed through KEENAN mixers worldwide each month, with products like brewers, potatoes, bread, biscuits, chocolate, vegetables and breakfast cereal adding energy and protein to the diet in a cost-effective way. With some by-products, there are side effects like the oil content of brewers, which can affect rumen health and the butterfat of cows. Trial work carried out in the US showed that the mix produced by a KEENAN can allow a higher inclusion rate of this material in a rumen-safe way.

Utilising food waste, KEENAN follows parent company Alltech's mission for a Planet of Plenty™

With uncertainty prevailing regarding feed price and supply, now is the time to plan for the future. Avoid waiting for later in the year, when these decisions will be taken out of farmers' hands. The focus must be on efficiency to drive profitability, as it is in any business setting.



A TRIO OF TECHNOLOGIES from KEENAN, Alltech and InTouch



KEENAN and Alltech offer a trio of technologies to make it even easier for farmers to take complete control over feeding their herd. Included in the trio are the 4th Generation KEENAN Controller, a feed management mobile application and a feeds insight dashboard. Currently, KEENAN and InTouch technology is used to feed over 490,000 animals per day across 37 countries. Enterprise Ireland recognised the value that these advanced technologies have brought on-farm and awarded KEENAN the Established Agritech Award at the Enterprise Ireland Innovation Arena Awards last year.

KEENAN Controller

The 4th Generation KEENAN Controller retains all its unique user-friendly features, such as graphical bars showing loaded ingredients and pie charts for the rotation counter. The new controller has improved physical and technical attributes for increased usability and reliability on-farm.


In addition, it can now hold up to 199 different diets and up to 199 different ingredients. This is useful when animals with different diets are housed in separate pens.

The 4th Generation Controller also has improved connectivity for easy and quick transfer of diets, as well as information on mixing revolutions, loading and feeding data. It is also WiFi enabled and can link to a smartphone or tablet to duplicate the screen or send data.


Animal numbers and ration numbers can be changed directly on the 8" HD screen, which has an enhanced keyboard for ease of use.




4th Generation Controller



Feed Management App
— change diet/add ingredients/
increase number of herd etc.
from anywhere



InTouch Dashboard
— unique insights and
alerts for your herd



Feed Management App

The feed management app allows the farmer to control any aspect of feeding from the yard without having to go into the farm office. Everything can be changed on the go – ingredients can be added or adapted, loads can be configured, reports can be viewed live. The app can connect to the controller to manage all loading and unloading operations. Cows crave consistency, and these technologies combine to ensure that happens, day-in and day-out, for optimum herd performance.



InTouch Feed Management Platform

The InTouch feed management platform has also been updated with greater visibility for farmers over their farm operations. The dashboard gives real-time feed data insights, such as a visual timeline on dry matter/fresh weight, detailed data on individual pens and load accuracy alerts. It has many other features, such as milk production insights and benchmarking data, and offers many benefits, like:

- Easy and quick transfer of animal diets to the controller
- Real-time wireless transfer of loading accuracy and mixing revolutions
- Accurate control of feed costs, dry matter intake and refusal management
- Detailed graphs and reports on ingredients used, feed costs, herd productivity and feeding accuracy to optimise accurate management of animal feed inventory on-farm

“We continue to innovate, bringing new features, functions and insights while keeping it simple for the farmer to use every day,” Conan Condon, Head of Agri Analytics, commented.

“The real beauty for Enterprise Ireland is that all customers across the globe can benefit from this technology,” said James Maloney, Senior Regional Development Executive, Enterprise Ireland.

“WHAT OUR CUSTOMERS SAY:”

TW Atkinson, North Yorkshire, UK.

- Increased production by 3 litres/cow/day
- Increased FCE by 19%
- Increased margin by £0.81/cow/day

“Overall, the cows are more content. I like the InTouch system; it is easy to use, and we can tell the cows are getting a more consistent ration. We are now also utilising our grass much better by taking on advice from InTouch nutrition.”

Kenneth & Bert Speers, Donegal, Ireland Seasonal calving Holstein herd

- Improved FCE by 10%
- Increased milk production by 1 litre per cow per day
- Increased milk protein from 3.2–3.3%
- Less than 5% metabolic issues at calving

“We have far fewer issues at calving. Buffer feeding has helped maintain cows and production. The KEENAN controller keeps things consistent and helps make it easy for other staff who are feeding.”

Steve Palmer, Manawatu, New Zealand Spring calving, grazing and buffer feeding

- Production increase of 13,000 kg across the herd
- Significant increase in feed utilisation, waste decreased by 10%
- Saved a minimum of 5% of forage
- Extra output with reduced inputs
- Worth an extra \$78,000 per year

“With InTouch, I know my cows are getting the exact same feed each day. There has been fuel savings and less wear and tear on my mixer wagon.”

Richard Webber, Somerset, England

- Improvement in cow condition at calving time
- DLWG of 1.4 kg/day on growers
- Reduced labour, a time saving of 2 hours a day
- Consistent mixing of ration each day

“InTouch has made a real difference to our routine, animal performance and health. We are spending far less time feeding and doing a better job of it.”



COUNTRY FOCUS - FRANCE

Successive heat waves and summer drought have damaged corn silage crops in many areas of France this year. Thinking about the management of fodder stock and the feed efficiency of herds is more crucial than ever. Targeting the nutritional needs of animals at all growth stages guarantees optimal use of fodder.

KEENAN customers Jérôme Gentilhomme and Vincent Grieu tell us about their own experiences.

Jérôme Gentilhomme, Maine-et-Loire

Farms alone – 50 dairy cows – 460,000 litres of milk produced/year

The farm is 66 ha in total, of which 40 ha are for forages (corn, grass silage, pasture and hay). This leaves 26 ha for market crops.

In September 2019, Jérôme Gentilhomme started his own farming business and decided to invest in a second-hand KEENAN K140 14m³ mixer.

“I rely on feed efficiency to reduce forage needs and have as many crops as possible for sale,” Jérôme explains.

His mixer became the foundation for achieving this objective. The annual average feed efficiency of the cows is 1.50 (butterfat 4.61%, protein 3.52%), and the heifer age at calving is 24.5 months. Dry

cows, heifers and calves have specific rations to improve their health (veterinary costs €5/1,000 litres), growth and lactation start. The first-timers and the multiparous show production of 32 and 40 litres, respectively, at the start of lactation and 40 and 50 litres at the peak.

These performances, among other things, are possible through the production of excellent quality fodder for a highly digestible and efficient ration.

“I ensile the grass as soon as possible,” Jérôme says. “In 2022, it reached 0.99 UFL and 19.5% crude protein (CP).”

The effective fibre provided by the KEENAN provides very safe diets.

“I don’t hesitate to invest in rations and concentrate when necessary.”

The cost of purchased feed increased from €55 to €101/1,000 litres between 2020 and 2021, but the general productivity of the herd makes it possible to increase the direct margin from €176 to €228/1,000 litres. Jérôme currently produces 11,500 litres of milk/ha from his 40 ha of forage land and intends to continue to optimise its system.

“Despite the drought this year, I want to produce 600,000 litres of milk on the same amount of land and use 50% of my land for cash crops within two years.”

EARL du Coudray, Seine-Maritime

2 farm partners – 60 dairy cows – 480,000 litres produced

120 ha of arable crops, of which 30 ha are for forages.

In 2011, Vincent Grieu retired his silage shovel bucket for an approved KEENAN K140 14m³ mixer with one primary objective: to make better use of the farm’s fodder and mitigate his need to buy specialised alfalfa-based hay (€3,500/year).

The results came very quickly! In his first year, Vincent saved the equivalent of 4 Ha of corn silage (i.e., approximately 55 tonnes of dry matter). “Weighing the ingredients and making my own mechanical fibre with my straw allowed me to control the quantities ingested by the cows and reduce feed costs,” Vincent explains. Production gradually evolved from 22 to 28kg of milk per day.

In addition, a significant proportion of the corn silage savings was realised in the dry cow feed. Previously, the farm had corn ad lib and chopped straw when available. The production of a light ration made it possible to eliminate sorting and halve the share of silage in the ration. “Since then, I have had no more metabolic problems around calving,” Vincent says.

KEENAN was also called upon to produce heifer rations based on haylage and straw with no more waste around the racks. Finally, the calves now have a dry mash made from cereal produced on the farm. “These simple, high-performance rations have allowed us to gain 4 months of age at calving and reduce forage consumption in large heifers.” Vincent Grieu draws up a very positive assessment of the profitability of his investment: more surface area for sales crops, better herd health and increases at barn level. In 2018, he bought a new KEENAN MechFiber345 to further improve his mixing times.



“ These simple, high-performance rations have allowed us to gain 4 months of age at calving and reduce forage consumption in large heifers. ”

EMPLOYEE SPOTLIGHT

Conan Condon,
Head of Agri Analytics
Alltech



Tell us about your background?

I grew up in a town called Goresbridge in County Kilkenny, which is only 10 minutes from the KEENAN office. While I was not raised on a farm, it is definitely in the bloodstream. My grandparents on my mother's side were dairy farmers, and most of my uncles and aunts are still currently farming. I am a graduate of Computer Science from the Institute of Technology Carlow and have a degree in Software Systems Development from Waterford Institute of Technology. I joined KEENAN in June of 1998. I'm married for 14 years to Rosy, and we have one son, Kyle.

Describe yourself in three words?

Loyal, hard-working and dependable.

What is your role in KEENAN?

I have had various roles within KEENAN, starting with a Desktop Support role in 1998. I moved onto a Systems Administrator role in 2001 and became Group IT Manager in 2008. As Group IT Manager, I project-managed and implemented the rollout of ERP & CRM systems across the KEENAN Group.

In 2014, I was promoted to InTouch Director, with the main objectives of leading the development of the InTouch technology, delivery of service, process improvement and supporting business communications.

In 2020, I moved into the role of Head of Alltech Agri Analytics, with specific focus on delivering the InTouch technology,

connecting on-farm data and developing a cloud-based platform that can drive efficiencies and profitability on-farm.

What do you most enjoy about working at KEENAN?

Working with technology and data is always fun. Starting in KEENAN 24 years ago, we had 11 computers and one server. Now, at least every employee has a minimum of two connected devices. Seeing the rate of change and movement from technology as a nice-to-have to a must was exciting to see. There have always been opportunities within KEENAN and Alltech to grow, learn and take on new roles within the business. The team within KEENAN is great; they are always willing to help and support. I have always had good managers and I hope the same can be said about me!

What do you find most challenging about your role?

Connecting data — I would like every on-farm system, technology and data collaborator to be connected. This is most challenging element and there are many hurdles in this journey to bring valuable information to our customers. Data is so powerful and insightful; it allows for actionable decisions to be made on a daily basis. When I do connect different systems together, it so rewarding to see the many opportunities that are present for our customers.

What has been your proudest moment at KEENAN?

There are many proud moments within KEENAN, from launching new technology, to releasing customer dashboards to mobile applications. One of my proudest chapters in my career was being selected for the Pearse Lyons Incubator to develop a strategy to re-envision InTouch. We presented our new innovative technology to the Alltech executive team, InTouchGo, which automated ration recommendations direct to the customers smartphone.

We then progressed to the Pearse Lyons Accelerator programme, where our technology was presented on the main stage to more than 3,000 attendees at the Alltech ONE conference in 2019.

Can you describe your personality type (red, blue, yellow, green) and how does it benefit your job?

I'm split between red and blue, which I feel is a good personality type for my role. I am very goal-orientated, conscious of performance and delivering new technologies to customers. In order to do this, I need to make sure that the technology, applications and data being delivered are a 100% correct. I am a very logical person; I will use data often to remove emotions from decision making.

What are your hobbies outside of work?

I enjoy spending time with my family. At the weekends, I try to get out and play golf. I am a big Liverpool supporter; I don't get over to enough games but try to watch as many live games as possible. Also being from Kilkenny, hurling is in the blood!

Do you have a favourite quote?

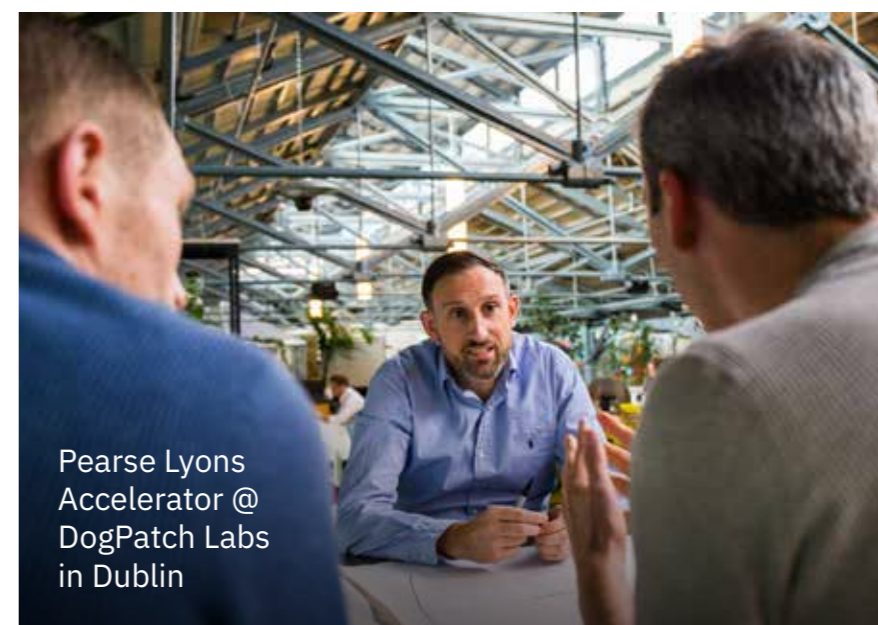
I was going through some old presentations last week and I came across this quote from Jeff Bezos: *"Most decisions should probably be made with somewhere around 70% of the information you wish you had. If you wait for 90%, in most cases, you're probably being too slow."* This resonates in me as the need to capture all the data is not necessary and slows us down. If we have 70% of what is required, we, as humans, can fill in the blanks.

What does success look like to you?

Professionally, it is to continue to grow, learn and coach new leaders within the business. KEENAN and Alltech are great companies, and I want to be able to develop innovative technologies, drive data partnerships and deliver data insights to enhance the opportunity for growth for our business and our customers.



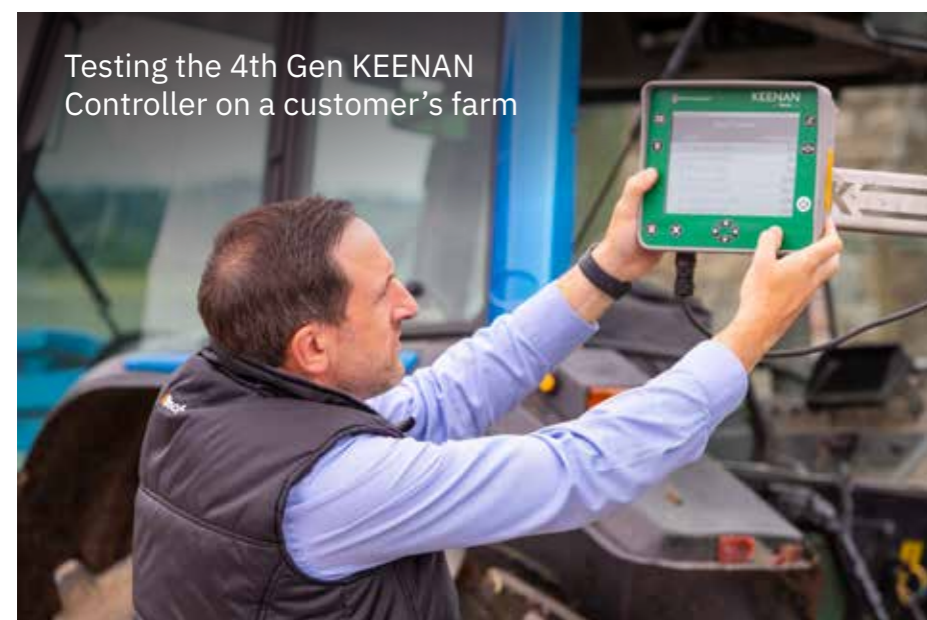
Alltech ONE Conference 2022



Pearse Lyons Accelerator @ DogPatch Labs in Dublin



Taking part in Alltech's mini-MBA at the Smufit Business School, 2018



Testing the 4th Gen KEENAN Controller on a customer's farm

KEENAN AROUND THE WORLD

DENMARK - The first trade show to feature a MechFiber365+ is AgroNord in Aars, Denmark



FRANCE - Team France exhibits at Terres en Fête, north of Paris



IRELAND - KEENAN launched the new plus range on the farm of David Clarke in March

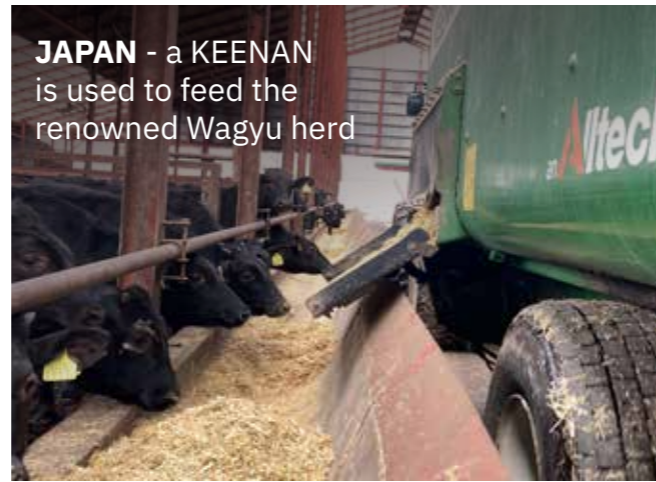


DENMARK - Exhibiting at Nutrifair - Denmark's specialised trade fair for livestock producers





SWITZERLAND - an electrically powered KEENAN on-farm in the Alps



JAPAN - a KEENAN is used to feed the renowned Wagyu herd



GERMANY - Ralf Hoffman welcomes visitors to the KEENAN booth at the Rottalschau



UK - The fine weather draws a big crowd to the Royal Highland Show, UK



SWITZERLAND and AUSTRIA - E-powered KEENANs are popular due to their low power requirement



UK - a KEENAN MechFiber365+ fitted with the 4th Gen Controller at the Great Yorkshire Show

IMPROVED RESULTS AND PERFORMANCES FROM INTOUCH



Results over the last 5 years for KEENAN first time users have been tracked and measured using InTouch technology. Significant improvements in feed efficiency, milk yields and solids, coupled with reduced feed waste, greatly increase the margin per cow per lactation. The data also points to a reduction in the amount of methane produced per litre.

Number of cows: 13,3792

€
€30,800**

On average, a dairy farm with 100 cows will gain an extra margin of €30,800 during the first year of using a KEENAN diet feeder

*based on standardised feed costs
**based at 40 cent/l milk price over 365 days

 **+11%** FEED EFFICIENCY

 **-10%** METHANE PER LITRE PRODUCED

 **+1.8** YIELD (kg)

 **-0.76** DMI (kg)

 **+0.07** FAT %

 **+0.05** PROT %

 **-2.0 c/l** FEED COSTS

Average results from 2016-2021 for KEENAN first time users

Try your best, it's not a test, have a go at the sums and have some fun!



Ages 10 - 15

1

There are 100 cows in a field. Each cow drinks 70 litres of water per day. How many litres of water do the cows drink in one day?

2

Cows can drink up to 14 litres of water per minute. If there were 10 cows all drinking from a water trough at the same time, how many litres of water would they drink in sixty seconds?

3A

There are 25 cows in a group. Each cow produces an average of 7,200 litres of milk per year. How many litres of milk do the cows in the group produce in one year?

3B

There are 10 groups of cows. How many litres of milk do all of the cows produce in one year?

3C

Half of the milk produced by all of the cows is made into ice cream. How many litres is this?



4

The following ration is mixed and fed to a group of 50 cows using a KEENAN diet feeder.

Ingredient	Weight (Kgs)
Water	645
Minerals	35
Dairy Pellets	1100
Fodder Beet	500
Wholecrop	320
Grass Silage	1400
Total	

What is the total weight of the ration?

All of the cows eat the same amount, how much does one cow eat?

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#changeformthebetter