In the mix MAGAZINE

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THE WORLD'S FIRST CARBON TRUST ACCREDITED DIET FEEDER!

SIMPLE STEPS TO SIGNIFICANTLY IMPROVE YOUR HERD HEALTH

KEENAN®
an Alltech® company

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WELCOME TO
IN THE MIX

In our summer issue of In the Mix, we highlight the people behind the story: You, our farmers! Read about how farms are increasing their profit, improving herd production and reducing visits from the vet by undertaking a very effective and simple approach to their farming system.

In the pages ahead, you can read about a topic of particular relevance to the ag industry, Climate change; one of the biggest challenges facing agriculture globally. With a growing global demand for food and a rapidly evolving marketplace looking for the industry to prove its sustainability, we are proud to announce the Carbon Trust have validated the green machine as the first environmentally sustainable diet feeder in the world.

We look forward to sharing more stories from around the world with you.

Matt Higgins
General Manager
KEENAN

KEENAN
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SIGNIFICANT COST SAVING OPPORTUNITIES LIE IN DRY COW NUTRITION

Taking steps to improve dry cow nutrition can significantly reduce the incidence of metabolic disease within the herd, improving overall efficiency and profitability.

Results from a trial comparing metabolic disease incidence rates in cows fed a conventional dry cow diet versus a high-fibre KEENAN MechFiber mix[1] suggest delivering a consistent ration with optimum structure during the dry period should be a key focus.

Based on a reduction in health issues around calving, findings from the trial indicate an average 148-head milking herd could expect to achieve a financial benefit in excess of £11,000/ €11,858 per year.

Chris Lord, UK InTouch manager for Alltech says that dry cow management is often left to chance as the milking herd takes priority, but this can prove costly.

“Getting it wrong at this stage can be detrimental. If cows aren’t adequately prepared for calving and the transition into lactation, they’re unlikely to achieve their full yield potential,” Mr Lord explains.

“There’s also an increased risk of metabolic diseases, such as displaced abomasums (DA), retained cleansings and milk fever.” The costs associated with these diseases, both short and long term, are high.

“For example, a single case of a DA costs producers around £4,392/ €4,735 per cow,” he explains. “This takes direct costs such as increased herdsman time and veterinary bills, into account, as well as indirect costs associated with areas including reduced fertility and increased culling.”

“It’s also important to consider the less obvious costs which aren’t typically accounted for, such as the impact of a sick cow on feed waste and underutilization. There can be 100% feed waste while a cow is in the sick pen and not producing milk, which can have a major impact on the bottom line.”

Mr Lord says that by focusing on nutrition during the dry period, the incidences of metabolic diseases, and associated costs, can be reduced.

“The primary aim is to maintain body condition. A high-fibre, controlled-energy diet, with a crude protein content of between 13 -14 percent is recommended,” he explains.

“Ration consistency is key to ensuring that cows receive a stable and controlled intake of nutrients. And feeding a thoroughly mixed but not over processed TMR, with an optimal chop length of between 4 - 6cm is proven to reduce metabolic diseases.”

During the trial[1], cases of retained placentas reduced by over 50%, from 10.7% to 4.6%, and incidences of milk fever dropped from 9.9% to 2.5%, in cows receiving KEENAN’s unique MechFiber mix.

It is also important to ensure the diet provides adequate levels of minerals and trace elements because of their critical role in a host of body processes.

“Calcium status is vital, along with trace elements, including selenium, zinc and copper, which have an integral role in supporting immune function,” explains Mr Lord.

“When it comes to trace minerals, the form in which they’re supplied is key. For example, including organic forms such as Bioplex® and Sel-plex® is preferable because they mimic nature’s own form. This means they’re more bioavailable to the cow and can be stored in the tissues, ready to be mobilized during times of increased need,” he adds.

“This is particularly important at times of physiological stress such as calving, as the cow may have a sudden requirement for increased levels of minerals. If not available, cows can be more at risk of metabolic diseases.”

“Ration consistency is key to ensuring that cows receive a stable and controlled intake of nutrients.”

[1]D.R. Colman, D.E. Beever, R.W. Joly, J.K. Drackley. Gaining from technology for improved dairy cow nutrition: Economic, environmental and animal health Benefits. The Professional Animal Scientist 27 (2011): 505-517 [2]Daisy Report UK, 2014 (adjusted for inflation at 2.1% pa)

Nestled in the scenic landscape of rural Northern Ireland, neighbouring the banks of the River Foyle, third-generation dairy farmer Alistair Thompson farms 600 pedigree Holstein cows across two sites at Beaverlodge Farms in Strabane, Co. Tyrone.

Calving all year round, Alistair's cows are currently averaging 8,500 litres. A thorough approach to animal husbandry and cow health is the number one priority for Alistair.

"A stringent management policy has been put in place at Beaverlodge Farms to ensure that herd health and good nutrition is prioritized to produce strong healthy calves and cows."

The milking cows are housed on water beds, which is said to reduce the effects of heat stress on the herd and aid milk production.

Changing from a non–KEENAN tub feeder to a KEENAN MechFiber400, fitted with a KEENAN controller and the InTouch feed management platform, Alistair has improved milk production by approximately 2L/cow/day since 2018.

"We're very happy with the machine. We've seen a significant lift in milk production — on the exact same ration — since getting the KEENAN.

"The feed is visibly better mixed and is uniform along the whole length of the feed barrier. There is far less sorting and the animals are getting a consistent diet," said Alistair.

"We have also found the InTouch system invaluable for controlling ration costs and making sure the cows receive the exact diet every day, regardless of who does the feeding. We only thought we knew how to feed cows prior to using the KEENAN and InTouch system."

Working with InTouch gives Alistair the control to efficiently measure, monitor and manage the cows' diet. Data from the KEENAN controller is fed back into InTouch, which is operated by a skilled team of Feeding specialists who work one-on-one with the farmer to ensure their animals meet their performance potential every day.

Alistair can update the ration diet in less than five minutes and be assured that his cows are receiving consistent mix quality, delivering significant improvements in herd health and animal performance.

Click here to view Alistair Thompson's testimonial video.

"Alistair has used other types of diet feeders in the past, however, the reason he chose to purchase a KEENAN diet feeder was the unique MechFiber ration and the ability of the KEENAN controller to ensure his cows were getting the required feed.

"He gets control 24/7, 365 days a year," said Gareth McAllister, KEENAN regional sales manager, Northern Ireland.

"There's no doubt that good husbandry and a consistent diet is the cornerstone for milk production. Coupling this with a quality feeding programme consolidates Alistair's efforts and helps to guarantee that his on-farm targets are met," McAllister added.

AN UPDATE FROM **INTOUCH**

Launch of InTouchGo at Alltech ONE19 Conference

It has been a busy few months for the InTouch team, with some exciting developments to showcase.

In February, InTouch was selected to join nine other leading agtech startups from around the world on the Pearse Lyons Accelerator. This programme is one of the world's top agtech accelerators and in 2019 alone had over 250 applications for just 10 places, highlighting how prestigious it is to be accepted to take part. Over sixteen weeks, and working in the Dogpatch Labs startup hub in Dublin, the group was tasked with reimagining the future of InTouch and how to innovate this feed management technology to bring even more value to customers.

Inconsistencies in milk production caused by delayed decision making is costing farmers thousands of dollars each week. This was one of the primary issues that the InTouch group set about addressing. After months of intensive work, having had the opportunity to explore and test a range of ideas and solutions, the all new InTouchGo was unveiled in front of over 3,500 attendees at Alltech's ONE Conference in Lexington, Kentucky.

InTouchGo is the world's first intelligent mobile application that uses insights from daily milk production and feeding data to deliver real-time automatic ration recommendations directly to the farmer's smartphone, on the go! Built for easy integration and collaboration with third-party agtech providers, InTouchGo delivers a more consolidated view of on-farm data and delivers insights that can be acted on immediately. Developed with a focus on ease of use, InTouchGo delivers a best-in-class mobile user experience for the farmer. Push notifications for ration recommendations and easily accessible key farm information ensures farmers can make the best decisions in a proactive and effective way.

A series of on-farm trials utilizing the new technology are underway in the U.K., and further pilot studies will be rolled out in the coming months. It is expected that the new technology will be available for full rollout on-farm in 12–18 months. ***Watch this space!***

New InTouch Portal

With the recent launch of the new InTouch portal, it is now even easier for farmers and nutritionists to view all key farm information in one place. This portal has replaced the traditional MechFiber community site and can be accessed in two ways, either through your InTouch Daily TMR Manager programme or by going directly to www.portal.intouchagri.com

On the portal's home screen you will find a dashboard with some of the farm's main key performance indicators (KPIs), including milk yield, feed efficiency, cost per litre and dry matter intake. A traffic light system means you can quickly see what current farm performance is against set targets. All historical farm information is contained within the portal, so you can easily see different trends and different correlations. Ease of use is a central feature; KPIs across different calendar periods can easily be selected, while reports such as feed ingredient usage can either be saved or quickly printed.

Your InTouch user ID and password will be needed for first login. If you do not have these, please contact your local InTouch feeding specialist or ***contactintouch@alltech.com***

InTouch and UNIFORM-Agri collaborate to drive even greater efficiency on farm.

As new agricultural technologies continue to develop and proliferate on-farm, collaboration amongst different providers is now seen as central to unlocking the value of these innovations and ensuring farmers can reap the promised benefits. Since its formation, InTouch has been creating links throughout the food supply chain and is now delighted to announce an exciting new collaboration with UNIFORM-Agri, Europe's largest provider of herd management technology.

InTouch users who are also using UNIFORM-Agri on-farm can now automatically export their daily milk production data directly to InTouch. Having this milk data coming into InTouch each day allows farmers and nutritionists to quickly validate different feeding strategies, identify potential production issues and work proactively in delivering the best nutritional solutions for the herd.

If you are a current UNIFORM-Agri user and would like to set up a transfer of your daily milk production data, please contact the UNIFORM-Agri help desk who will assist with this. Alternatively, if you are an InTouch user and are interested in finding out more about how UNIFORM-Agri could work on your farm, please contact your local InTouch feeding specialist, who will be happy to get more information for you.

ONE ALLTECH

CURRENT GOOD GRASS GROWTH HAS HELPED TO MAKE 2019 A POSITIVE YEAR FOR MILK PRODUCTION FOR OUR KEENAN INTOUCH CLIENTS.

Derry O'Brien milks 71 cows at Kilworth. The farm has been in the family since 1995.

Starting off with his father's 40 cows, Derry has grown the heard since taking the reigns in 2002. Operating a spring calving system, Derry maximizes grazing of the 24 hectare block around the farm. An out-farm provides grazing for replacement heifers and some silage production. The balance is bought in.

Derry uses AI to produce replacements and has a new Limousin bull in the herd, the previous bull having been on the farm for an impressive 14 years. Visiting the farm, it was clear the cows were benefitting from excellent grassland management. Derry said, "I want to get as much grass into them as possible, and growth has been good this spring".

Derry bought his third KEENAN machine in November 2018, having had the previous one, which was bought secondhand, for seven years. Now an InTouch full system farmer, he says using the KEENAN controller and InTouch feed management is a great addition, very user-friendly and there is always a feeding specialist on the end of the phone if you need any help. "The diets download directly to the machine, and once you get the hang of that, it makes life very easy."

Derry has seen his milk yield increase from 440,000 litres in 2018, to just under 500,000 litres in 2019, which he attributes to the consistency of the cows' diet.

"I had three diets formulated, in full time, out by day, in by night and out full time. Now that the grass is really growing, they are getting 4–5kg in the parlour, but the diet feeder is off." Maximising grass is a focus but ensuring his cows were ready to hit the ground running in spring was most important to Derry. "The dry cows were very content, and they had an even body condition score throughout the group," he added. "I felt the cows got going faster after calving this year."

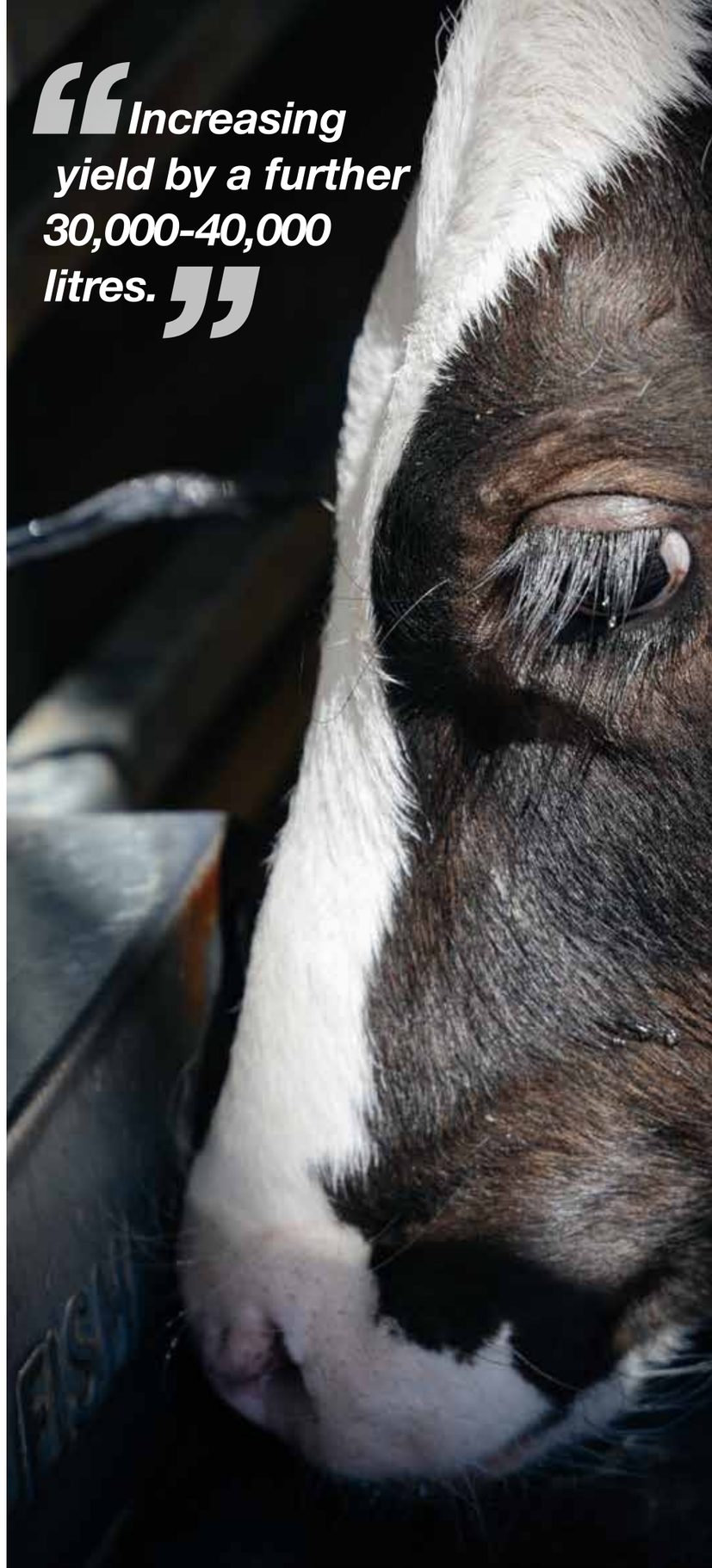
Looking at April for year-on-year comparison, Derry saw a five-litre improvement in the average yield per cow and an increase in protein, from 3.19% in 2018 to 3.28% in 2019.

Overall herd health has been fantastic, there was only one case of milk fever and only one assisted calving among the 16 heifers that calved. Derry didn't need to get up once during the night. The only incidences of retained membranes were in cows with twins. The replacement heifers are reared by Derry, and he keeps the bullocks until they are a year old. He uses his KEENAN diet feeder to facilitate some cost savings by producing his own calf mix.

It is formulated by Alltech InTouch nutritionist Séamus Callanan to be nutritionally balanced. The mix is straw, molasses and concentrates. Derry says, "I know the straw alone is keeping them content, and their rumens developing properly." I haven't had any issues with scour this year."

On the InTouch diet for cows, Derry says, "The mix that is put in front of the cow ensures the last bite is as good as the first. All cows get the right nutrition, they are more relaxed and not fighting to eat the good bits while they are available. I also save time at housing because I don't need to separate the bullies into different pens. They all know good fodder is constantly available."

Derry's herd aims include a compact calving period, maintaining milk protein and fat levels and increasing yield by a further 30,000-40,000 litres.



Farming near Bandon, Patrick Aherne has increased numbers, and now milks 210 Holstein Friesian cows.

With spring and autumn calving, it is safe to say there is never a dull moment. AI for spring cows is in full swing at present. The 68-hectare grazing block around the farm has well-laid out roads and paddocks, and the cows are currently on a 14/10-hour grazing rotation. Walking through the cows at grass, it was clear both groups were content and in excellent condition.

At the end of 2018, Patrick upgraded from a KEENAN 140 to a MechFiber370. The new machine allows for larger quantities to be mixed, reducing the time required to feed. “My first machine was secondhand and I had it for four years, but, with the expansion, I needed something bigger.”

The cows average 7,000 litres with average protein and fat at 3.5% and over 4% respectively. “They get 2.5-3kg in the parlour at the minute, but the mixer is off for the summer.”

“The cows are up two litres from March, and the protein has been consistent.”

Another positive Patrick has seen is the weighted average somatic cell count for the herd, down from 200 this time last year, to 160 this year.

Patrick is also a full KEENAN system farmer using the Intouch nutrition service, with feeding specialist Séamus Callanan formulating his diets, and using the KEENAN controller to produce a consistent and nutritionally balanced feed.

Patrick is particularly happy with the dry cow diet, noting how well his cows looked on it. He says that herd health has been excellent this year, stating “we had very few retained cleanings.”

“I am aiming to get the butterfat a bit higher going forward”. “I am also going to start putting the mineral in the mixer this year to ensure the cows are getting the benefit. When you feed it in the parlour, you’re never sure if they eat it’.

Pat O’Donovan milks 165 cows on his farm on the outskirts of Whitegate, Co Cork.

With an expanding spring and autumn calving herd of Friesian and Holstein Friesian cows, there is no quiet time.

“This year is going well so far. I had 10 extra cows, 45 heifers to calve, and the calving interval is averaging at 380 days.”

After 16 years with his previous KEENAN machine, Pat purchased a MechFiber 350 last October. “I bought my first mixer for the cows and dry stock I had at the time, and in 16 years I only had to reline it once and change a couple of bearings and chains.” Pat fully embraces the KEENAN system, using the KEENAN diet feeder, which is fitted with the KEENAN controller and the InTouch feed management platform to formulate nutritionally balanced diets.

“The mixer is off for the summer now. The grass growth is good, but I am giving them 6kg of meal in the parlour. I want the cows doing their best.” From January to March, Pat has seen a year-on-year increase of 11.8% in yield, compared with 2018. Milk solids have increased 10.8% for the same period.

“The target now is 600kg of milk solids per cow, with 1–1.5 tonnes of feed, I was at 552kg per cow last year.”

Year-on-year, protein and fat percentages were consistent at 3.48% and 4.47% respectively. Pat is in the top 10% of Dairygold suppliers for butterfat content.

“I swear by the InTouch system. It’s great to have the diets downloaded; I save a lot of time using it and I have peace of mind that the mix is nutritionally correct for my cows. With the old machine, there was a bit of guesswork involved, but now it is all in front of me on the controller.”

With a larger machine, Pat only mixes twice a day for cows and every second day for weanlings, saving him precious time. “I use beet in the diet — the cows go mad for it — and the consistent mix the machine produces stops the cows sorting the beet from the other ingredients. I have used beet and citrus pulp in the past, but this year I will be using the beet with maize silage.”

THE RESULT IS IN THE MIX

THE ROLE OF FIBRE FOR BETTER FEED UTILIZATION

CATHAL BOHANE, HEAD OF INTOUCH NUTRITION

The role of nutrition for animals has always concentrated on dry matter intake (DMI), energy, protein and minerals, among other nutritional parameters. We are constantly focused on trying to increase productivity, but this needs to happen through efficiency gains, otherwise there will be no margin in it for the farmer. Research, education and a willingness to learn new techniques has allowed us to become better managers of our animals and farms over the years, and so we are learning new methods in order to drive this efficiency in our systems and animals.

Concentrate feeding, higher quality silage and other ideas have pushed production higher, sometimes at the expense of the animal, but more importantly, the rumen or stomach of the animal. For this reason, fibre has become an even more important parameter when it comes to production. Fibre drives rumen health and, in a simplistic way, counteracts the energy of the diet coming in the form of starch and sugars contained within grain, grass, etc. Excesses of these types of energy can lead to acidosis in both dairy and beef change and lower butterfat for milk production. They can also lead to secondary issues like lameness. If we compromise the rumen of the animal, we are shutting down its engine, and production and weight gain will follow suit.

As outlined earlier, there has been increasing emphasis placed on achieving higher quality and digestible forages, particularly grass silage. The fibre content of these forages now acts more like energy, so there is a need for effective long fibre to be added to the diet. Fibre can come in many forms and the perfect way to describe the difference is soya hulls and straw. If we sent a sample of both to a laboratory, they would have similar levels of fibre (NDF), but as we know in reality, they are physically very different. Unlike the soya hulls, the straw provides a 'scratch factor' that will stimulate cud chewing in the animal and will offer a better quality of fibre to the animal outside of nutrient quality.

The story only begins here, as how we present this to the cow will also have an effect. Offering free access to straw if cows have a stomach upset, are loose or have dropping butterfat levels, will not solve the issue, as straw in itself is not the most palatable or readily consumed. Hence, the delivery via a total mixed ration (TMR) from a diet feeder is the ideal way to present this ingredient, as it is mixed with the other ingredients that could cause issues and there is less opportunity for the animal to sort the feed and select the tastier parts of the diet.
Research by KEENAN over the years has further shown that how you mix your TMR also has a large effect.

"The fibre content of these forages now acts more like energy, so there is a need for effective long fibre to be added to the diet."

On-farm studies over a number of decades have shown a 0.5kg increase in milk with 0.7kg less DMI after mixing the exact same diet and ingredient proportions in two different ways.

This backs up the hypothesis that balancing your ration is important, but the quality of the mix that you produce is equally as important.

While harvesting forages at the proper chop length is critical, additional attention should be paid to the process of feed mixing, as it may result in large effects on the diet particle size and uniformity. Even outside of the diet feeder's ability to mix the feed properly, there are generally three diets fed on the farm: the one the nutritionist created, the one the farmer thinks he or she fed and the one the cows actually eat.

These can be very different diets on some farms, which is concerning. To reduce this error on farms, we need to constantly review and check the following in the mixing process:

1. Working condition of the diet feeder – blades, paddle rubbers, weighing system, etc.
2. Loading order of ingredients
3. Margin for error in the loading of individual ingredients
4. Mixing times
5. Post examination of (TMR) feed out for:
   a. Moisture level
   b. Chop length and type – is there effective fibre in there?
   c. Consistency – is there equal proportions of feed throughout?
   d. Sorting present during the following 24 hours
   e. What are refusals like?

The importance of attention to detail and managing the mixing process has been highlighted through a study of 600 U.K-based farmers. All of the farmers were operating a diet feeder in conjunction with a nutritionist who balanced the diet – however a cohort of the farmers within the study also monitored their mixing process, ingredient addition accuracy and loading sequence. Those that monitored their process and applied best practice on a daily basis were able to produce an extra 628 litres of milk (45kg MS) per cow over the course of the year.

CARBON TRUST VALIDATE THE KEENAN GREEN MACHINE AS THE FIRST ENVIRONMENTALLY SUSTAINABLE DIET FEEDER IN THE WORLD

Irish-based machinery brand, KEENAN, has been certified by the Carbon Trust as a more sustainable diet feeder, proven to reduce methane emissions on-farm. As a company, KEENAN has long been synonymous with engineering cutting-edge diet feeders, which produce a unique homogeneous mix that optimizes rumen health and ensures consistent animal performance.

“In light of the Irish government’s announcement regarding the Climate Action Plan, which aims to push Ireland to reach its 2030 targets, and to achieve net zero carbon emissions by 2050, KEENAN are delighted to offer farmers a tangible means of reducing their carbon footprint on-farm, while enhancing production and profitability,” said Matt Higgins, general manager, KEENAN.

The Carbon Trust has verified that reduced methane output linked to enhanced rumen performance in dairy and (per liter milk and daily liveweight gain in beef animals) can come as a result of improved feed conversion efficiency (FCE) in livestock. Having investigated the output from the KEENAN diet feeder and reviewing data from the KEENAN Controller, the Carbon Trust has established that the KEENAN machine can increase rumen efficiency by delivering feed that is more easily digestible for cattle, meaning less energy is required and produced by each animal.

The unique engineering features and mixing action of a KEENAN diet feeder make it synonymous with mix quality. Mix quality is the sum of many parts, including chop type and length as well as fiber type, presentation and most importantly, consistency. Optimized diet formulation relies heavily on the physical mix that is delivered to the animals; this mix needs to be delivered consistently every day in order for farms to achieve their production goals while enhancing the efficient use of their feed.

“The animal food supply chain is faced with growing pressures to reduce methane and carbon dioxide emissions. As concern for our planet’s finite resources escalates, we have a responsibility to be proactive in sourcing solutions and partnerships that can relieve environmental strain and prioritize sustainability on-farm,” said Higgins.

The Carbon Trust report cited that improving herd performance through improved FCE is expected to reduce methane production. KEENAN estimates this can lead to as much as 25 percent less methane when a below average herd receives rations from the KEENAN diet feeder and the KEENAN Controller.

“The Carbon Trust accreditation is a powerful endorsement, which enables us to further help farmers reduce their on-farm carbon footprint, while increasing their profitability,” said Higgins.

KEENAN has been a member of the Alltech family of companies since April 2016. Alltech has always been deeply rooted in their sustainability efforts and continue to strengthen their commitment to the animal, environment and consumer, with their Planet of Plenty™ initiative.

> ***“KEENAN are delighted to offer farmers a tangible means of reducing their carbon footprint on-farm, while enhancing production and profitability.”***

“With the adoption of new technologies and management practices, and, most of all, human ingenuity, we believe a Planet of Plenty™ is possible,” said Mark Lyons, president and CEO of Alltech. “Our Planet of Plenty™ vision propels our founding ACE principle into a new world of possibility, where anyone and everyone can make a positive impact on our shared planet.”

EMPLOYEE SPOTLIGHT

MATT HIGGINS
GENERAL MANAGER

What are your key responsibilities/ focus points in your role as general manager?
I am responsible for the day-to-day operation and performance of the KEENAN business. In hard measures, if you like, it's the delivery of our financial targets and growth objectives. Key to this is:

- Sales growth
- Innovation
- Enhancing the customer journey
- Creating an environment within KEENAN that will retain and attract the best people and will allow them to deliver on their own potential and the KEENAN potential

What is your background prior to your role as general manager?
I joined KEENAN in 1995 in a finance role and following a number of promotions I was appointed CFO in 2000. In 2006, I was appointed commercial director, with wide-ranging responsibilities across the business.

What do you value most about the culture and vision in KEENAN?
KEENAN, for me, is a business that aims to punch above its weight, with a strong customer focus and a commitment to delivering a differentiated and value-creating product to customers. Innovation in the product, service and how we do our business have always been core and it has attracted people who genuinely connect with these principles.

Can you share some insight into how/if KEENAN has changed or progressed since joining the Alltech family of companies in 2016?
The KEENAN business has been through a huge journey over the last number of years. There are a great number of similarities between the culture and vision of Alltech and that of KEENAN. Robert Walker, CEO of KEENAN, did a terrific job in successfully integrating KEENAN into the Alltech business. We also had a great deal of support from Dr. Lyons during the initial 2 years following acquisition and more recently from Mrs. Lyons and Mark (Lyons, president and CEO of Alltech). Obviously when integrating two businesses some challenges will arise along the way, and at times it has felt like 'two steps forward followed by one step back' — this was particularly the case with channels to market in certain geographies — however overall progress has been fantastic in terms of the increased opportunities the KEENAN business now has.

Agriculture has frequently become the scapegoat for climate change. Against a backdrop of diminishing natural resources, a changing climate and a growing population, sustainability is quickly becoming a non-negotiable for businesses and agriculture. How is KEENAN addressing this evolving issue within agriculture?
Agriculture is often an easy target, and there is a huge variation in agricultural practices throughout the world. But I see this as representing an opportunity for agriculture to lead by example. If we look at our own range of potential impact:

1. **Feed conversion efficiency (FCE):** This is central to the KEENAN value proposition and relates to beef as much as it does to dairy.
   - Independent research in Illinois clearly shows that the same ration ingredients mixed in a KEENAN versus mixed in a vertical auger machine deliver 16% more energy correct milk when mixed in a KEENAN.
   -The average customer joining KEENAN for the first time has an FCE of approximately 1.2. The average KEENAN customer after one year has an average FCE of over 1.35.

The impact of this enhanced feed efficiency is significant in terms of food production and the efficient use of available resources.

2. **Methane reduction:** Looking at the most recent accreditation by the Carbon Trust, KEENAN is now validated as having a positive impact on rumen environment, resulting in a reduction in methane emissions, with numbers indicating that up to a 25% reduction in methane emissions is possible!
3. Within our own business, and particularly here at the factory in Borris, KEENAN has achieved ISO 14001:2015 certification for our environmental management system and is the first business unit within Alltech to do so.

We can lead by example in a number of aspects.

Can you explain how KEENAN reduces carbon footprint on-farm?
The largest impact is through the reduction of methane emissions. The physical properties of the mix from the KEENAN are unique. This optimizes the function of the rumen and creates a more favorable rumen environment. The result is a better conversion of feed into milk or beef and a reduction in methane production. Methane is primarily a byproduct of the amount of feed ingested by the animal. With a better rumen environment and the improved feed conversion efficiency, we believe that reductions of up to 25% per unit of output (kilogram of milk or meat) can be achieved on the average farm.

A secondary benefit is delivered through the fuel efficiency of the KEENAN machine. The KEENAN takes less power to drive, requiring smaller tractors and reduced fuel consumption. Many users attest to reductions in fuel usage of between one third and one half, resulting in a positive environmental impact and financial gains.

What does the Carbon Trust validation mean for KEENAN?
For KEENAN, it is an independent validation of the positive environmental impact. That is a benefit that genuinely connects with many farmers who have a huge role to play in the guardianship of the environment. It is also a message that I believe connects well with consumers. We now need to bring it to the next step: Can we have it recognized by regulators and legislators? Can it be factored into how the carbon impact of farm enterprises is calculated and even to a national impact? Can it be factored into carbon credits? We have significant meetings scheduled at national and European level over the next number of weeks. Achieving positive engagement at these would be beneficial for the KEENAN proposition and ultimately environmental impact. It is very much a case of 'Dare to Dream.'

“KEENAN is a brand that is recognized — and, I believe, hugely respected — within agriculture, in many of the world’s leading dairy and beef producing countries.”

How has KEENAN grown and developed in the last 40 years of business?

KEENAN is a brand that is recognized — and, I believe, hugely respected — within agriculture in many of the world’s leading dairy and beef producing countries. We have customers in more than 75 countries worldwide, and all of these are using products that have been manufactured — or in the words of Dr. Lyons, ‘handcrafted’ — in a rural village in the southeastern corner of Ireland. It is a huge achievement for all that have been associated with the business during that time, both Irish-based and within the markets. What is important now is the next 40 years, and that we continue to innovate, manufacture and sell products that will meet the needs of our current and future customers.

Is innovation important in KEENAN? If so why, and can you elaborate on KEENAN’s innovation journey?

Successful innovation is key to our future. Much of our higher profile innovation in recent times has been in the InTouch area, with the machine-focused innovation being much more low key and more around enhancements rather than highly visible machine developments — with the exception of the Self-Propelled launch.

Over the last year, we have embarked on an excellent process in terms of identification of future customer needs and are on a path where we now have a vision toward a Machine 2020, Machine 2023 and Machine 2025. This will help ensure we can bring a stream of leading-edge solutions to market more effectively and faster. I believe there will be a continuing focus on ruminant feeding, but I do see opportunities that can also bring us into the environmental area.

How does KEENAN bring value to the customer?

Our lead proposition is improved FCE – delivering more milk or beef per kilogram of dry matter intake consumed by the animal. This is as a result of the unique physical properties of the KEENAN mix. Related to this are the health improvements for animals and the reduced environmental impact. Combining the mixer wagon and InTouch, we bring increased control to the farmer and deliver precision feeding.

What is the unique selling points that sets KEENAN apart from its competitors?

The current KEENAN USP is clearly related to the physical properties of the KEENAN mix and the impact this has on the production and health of the animal. This is something that no other mixer wagon manufacturer can deliver.

Are there any overseas markets where you see great opportunity for KEENAN?

In a sense, and this may not be acceptable to some, I do not believe the opportunity for KEENAN in overseas markets is necessarily linked to the scale of the individual market. I see it as being more linked to the attitude and belief of the people we are working with in those markets and the strategies being implemented there. In markets where Alltech and KEENAN are bringing a joint on-farm offering — and that does not necessarily mean that the local Alltech must sell or service the KEENAN — we have a number of really good examples where there is a strong co-operation with local machine distributors who provide that machine infrastructure.

I believe these offer huge potential. Markets such as Romania are achieving levels of KEENAN and InTouch business that is way beyond that of far larger markets because of the alignment of that on-farm offering. Markets I am currently excited about in terms of potentially delivering significant incremental business to KEENAN would include Japan, Canada and Russia.

REARING CASH COWS IN WAIKATO, NEW ZEALAND

TRADITIONALLY, NEW ZEALAND DAIRY COWS ARE GRASS-FED, BUT WAIKATO MILK PRODUCERS GEOFF AND STEVEN IRWIN ARE SEEING IMPROVED MILK PRODUCTION, HERD HEALTH AND ENVIRONMENTAL IMPACT BY LOOKING CLOSER AT FEEDING AND HOUSING.

The latest DairyNZ figures show that there are now 4.86 million cows being milked in the country, producing 20.7 billion litres of milk, the lowest number since 2012. That is 130,000 fewer cows than last year, which produced 20.9 billion litres of milk.

However, over the past 12 months, the average dairy cow produced more litres of milk containing more kilograms of milk solids than ever before. This shows a shift in the industry toward better-performing cows.

Speaking to leading dairy experts on a recent visit to New Zealand, the consensus was that the increasing per-cow milk production showed that farmers were producing similar milk quantities from fewer cows, partly because of better breeding and feeding.

Increased yields and consistent milk quality

This is true for Waikato dairy farmers Geoff and Steven Irwin. In a traditionally grazing-driven region, the Irwins have seen increased yields from 110,000–180,000 kilograms of milk solids and consistent milk quality, greater lactations per cow and improving environmental standards on-farm from changing the feeding system and making general farm improvements.

“A couple of years ago, I decided to try to expand the business,” said Steven Irwin. “The neighbouring farm came up for sale at a cost of $6 million, so we decided to put an offer in. I was disappointed when the offer was not accepted, but in retrospect, it was all for the best.”

“In the event, we spent $1 million on improving our own farm and herd by putting in new feed bunkers, sheds, improving the herd and buying a new KEENAN MechFiber360 diet feeder,” he continued.

These improvements have increased milk production from 1.8 million kilograms per annum to nearly 2 million. Since 2012/2013 milk protein increased from 42,954–74,601 (last season), and butterfat increased from 60,511–99,313 this season.

Geoff said their pay-out is 40 cents above average, the farm is more nitrogen efficient and the feed conversion efficiency (FCE) of the MechFiber360 has reduced methane output.

Improved nitrogen efficiency

The biggest problem with pasture grazing is urine running off into the watercourses and rivers; a huge environmental issue.

“Since using the KEENAN diet feeder, we have improved our nitrogen efficiency,” explained Geoff. “We were applying 100 units of nitrogen per hectare, but now we are down to 40 units per hectare. The cap from Fonterra and the department of agriculture is 200 units, and our farm is now 44% nitrogen efficient.”

The farm, near Morrinsville, covers some 87 hectares.

“We grow 13 hectares of maize, and this is fed back to the herd,” said Geoff. “This also makes us more nitrate-efficient as nitrates that go back into the ground go into the maize. We also make 100 bales of silage and buy in another 300 bales. The rest of the farm is down to grass.”

The farm has 350 Holstein Friesians that are milked twice daily, averaging 1.88 kilograms, equating to 540 kilograms per annum per cow. They rear their own replacements, with autumn and spring calving.

Improving the herd

Geoff and Steven hope to improve the herd through genomic and DNA testing.“We have culled the poorer bulls, because the government is now starting to talk about stocking restrictions due to environmental concerns. We also use artificial insemination (AI) and cross-bred bulls to allow us to keep the top bulls in the herd.”

“We are seeing six–seven lactations per cow,” said Steven. “In fact, we have some cows that are over 10 years old. With milking the cows all year round, the cows just keep producing and we just keep ticking along.”

“We dry the cows off at an average of 1.6 kilograms (17–18 litres),” he continued. “Some guys in New Zealand are only producing this at peak milking times.”

Total mixed ration: KEENAN advice

On the advice of their KEENAN feeding specialist Séamus Callanan, the cows are fed the following total mixed ration (TMR):

Feed loading order	Fresh weight (kg)	Dry weight (kg)
Water	1.10	0.00
Optigen®	0.06	0.06
Wheat distillers’ grains	2.20	1.96
Palm kernel – expelled	1.75	1.57
Bread	4.00	2.60
Maize silage – average quality	13.00	3.64
Total	22.11	0.83

The diet costs Geoff $3.16 to feed 9.8 kilograms per cow per day of dry matter, which is 32 cents per kilogram of dry matter.

Optigen® for improved rumen function

Séamus advised the inclusion of Optigen® in the ration because the herd’s dung was very loose. Optigen, an Alltech product, is a unique, non-protein nitrogen source, which enables improved feed conversion efficiency (FCE) through the provision of nitrogen for the rumen microbes. Feeding Optigen optimize microbial protein synthesis, allowing for improved yields and better diet utilization, rumen health and fermentation.

“We were feeding conventional urea and the cows seemed ‘edgy,’” said Geoff. “However, within three weeks of the inclusion of Optigen, there was a huge difference within the cows. It’s a fantastic product.”

Facial eczema problem greatly improved

Herd health is excellent, with little mastitis and high fertility. The only problem is facial eczema, an endemic in New Zealand. It’s caused by a toxin produced by a fungus, which grows on pasture. These spores, when ingested, damage the liver and bile duct.

“It’s a dreadful condition,” said Geoff. “The cows are restless, looking for shade and licking their udder. If a cow has a white face, then the skin reddens, thickens and peels — and of course there is a big drop in milk production.”

Geoff has treated this condition by adding zinc oxide to the drinking water, but the cattle were not keen on drinking it. Seamus suggested that the Irwin’s add it to the TMR, and the condition has since greatly improved.

InTouch delivering on-farm

The MechFiber360 is fitted with the KEENAN controller with InTouch software. “The easy-to-use technology has allowed us to deliver a consistent and accurate ration to the cows, regardless of who is feeding,” said Geoff. “It guides us through the correct loading procedure, mixing time and ingredients quantities.”

“Before we had InTouch, we used a pen and paper in the tractor cab to adjust feeds, and it used to take us about 15 minutes to do this,” he continued. “We now just push the button on the box and it automatically adjusts. It’s fantastic!”

“We could have spent $6 million for another farm, but we are seeing the same profits and results by investing $1 million in farm improvements,” said Geoff. “We feel that feeding our cows correctly has been the biggest part of our success. We receive great advice from Séamus Callanan, and the quality of the mix produced by the KEENAN MechFiber is superb.”

WHERE IN THE WORLD IS **KEENAN?**

Germany
German company, Burhard Eßing, hosted the first KEENAN self-propelled demo day in the district of Borken, Germany. The event included discussions on InTouch, MechFiber and a live demonstration of the machine. Germany have five more self-propelled demos planned over the upcoming weeks.

New Zealand
KEENAN New Zealand are pictured here exhibiting at Fieldays. Fieldays is the Southern Hemisphere's largest agricultural event and the ultimate launch platform for cutting-edge technology and innovation – attracting over 130,000 attendees from all over the world. The event ran from June 12–15, 2019.

KEENAN Canada
First load of the morning at a new home on Martiann Holsteins Farm. Since switching to a KEENAN MechFiber machine, the farm has increased feed conversion efficiency (FCE) by 0.2% and reduced fuel cost massively.

Great Yorkshire Show
The Great Yorkshire Show is an iconic three-day mainstay in the English calendar. Every year, more than 130,000 visitors and over 8,500 animals converge on the Great Yorkshire Showground in Harrogate to compete, socialize and celebrate.

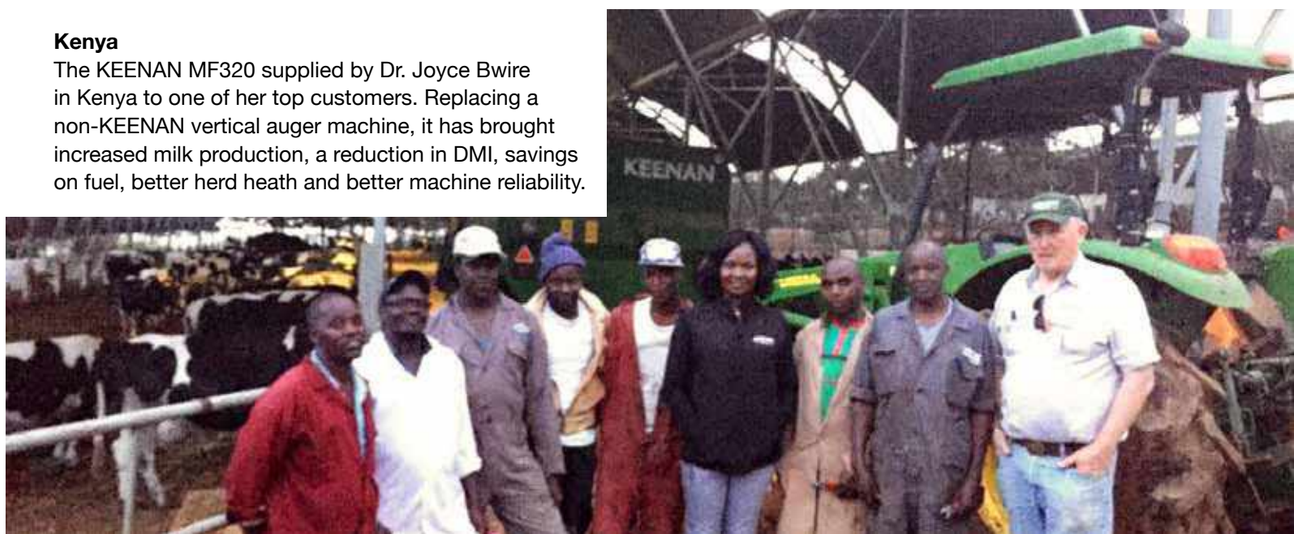
France
France have been busy with new KEENAN machine commissioning over the last few months (see image captions for further details).

Royal Welsh Show
Widely regarded as the pinnacle event in the British agricultural calendar, the Royal Welsh Show is one of our busiest shows of the year! During the show, Alltech UK & KEENAN offered expert advice on feed waste reduction, showcased our range of KEENAN diet feeders, provided live InTouch demonstrations and offered samples of our very own Alltech beverages, as well as locally produced ice-cream, produced by our customers.

Kenya
A KEENAN MechFiber270 machine commissioned for Mr. Shollei, director of Standard Group of companies, all the way over in Kenya. Mr Shollei is a farm owner who said he has entrusted KEENAN to feed his cows.

Belguim visitors
A group of Belgium farmers from the Farmers Union Langemark in Flanders paid a visit to KEENAN HQ in Borris, Co. Carlow.

The group enjoyed a presentation on the KEENAN System, followed by a discussion and interesting exchange of experiences from KEENAN users.



Kenya
The KEENAN MF320 supplied by Dr. Joyce Bwire in Kenya to one of her top customers. Replacing a non-KEENAN vertical auger machine, it has brought increased milk production, a reduction in DMI, savings on fuel, better herd heath and better machine reliability.

KEENAN OPEN DAY: THE HIGHLIGHTS

THIS SUMMER WE OPENED UP THE GATES TO OUR HEADQUARTERS IN BORRIS, CO. CARLOW, FOR THE ANNUAL KEENAN OPEN DAY!

Speaking on the day, James Brough, UK and Ireland general manager said, “The KEENAN Open Day is an event that allows us to showcase the full product range for KEENAN as well as the latest innovations in the group. We showcase the machines, we see the open day as an opportunity to highlight the latest news with the KEENAN controller, with Alltech and we also invite a handful of carefully selected exhibitors on the day.”

Overall, the day was a huge success, with over 200 people, including Irish dairy and beef farmers, walking through our doors.

Live demonstrations

A key highlight of the KEENAN Open Day is having the opportunity to showcase live machine demonstrations. This year, attendees were able to see both the KEENAN MechFiber bale handler and the KEENAN Vertical Auger machines in action.

Both diet feeders were fitted with the new KEENAN Controller, in combination with InTouch Daily TMR Manager software, which ensures a consistent ration for feeding livestock.

Our head of InTouch nutrition, Cathal Bohane, took to the stage to give a presentation on the importance of accuracy and consistency when mixing and feeding rations. He also demonstrated how silage quality varies across the clamp face and leads to variability in ration quality.

KEENAN MechFiber380 bale handler

Attendees at the KEENAN Open Day experienced first hand the benefits and features of the KEENAN MecFiber380 and the KEENAN VA2-24S.

The MechFiber 380 is designed for the farm that wants to feed large numbers of animals in a short period of time. With a payload of 9,000kgs, the machine is capable of feeding up to 150 dairy cows or 350+ fattening cattle for 24 hours with a single load. The machine manoeuvres more like the smaller MechFiber365, with some unique stand-alone product features.

KEENAN VA2-24S

The VA2-24S is the shorter option in the KEENAN VA 24m3 range and is ideally suited for situations where space is limited and mobility is of prime importance. During the VA2-24S machine demo, Bohane explained the different capacities in the VA range, which include 18-44 cubic metres with twin auger models making up the VA2 range.

Factory tours

It’s not often that we get external visitors into our factory, so the KEENAN Open Day is a great opportunity for us to reveal exactly how a KEENAN diet feeder is manufactured. We have approximately 120 employees currently working at our site in Borris — including administrative staff — and on average make around 10 machines per day.

Interested to know what happens at each stage of the production line? Find out more here: What takes place behind the scenes at the KEENAN factory in Co. Carlow?

Panel discussion

Once the live demonstrations were over, attendees gathered to attend a technical and informative panel discussion, which was led by InTouch feeding specialist, Seamus Callanan. After all, it’s all well and good listening to us, but it’s best not to just take our word — the farmers are the real experts! On our farmer panel this year was:

- Pat O’Donovan from Whitegate, Co. Cork: Pat runs a 160-dairy-cow herd on a 58-hectare grazing platform (see details on p.8).
- Kevin O’Hanlon from Co. Wexford: Kevin is a dairy farm manager whose farm is home to 170 spring- and autumn-calving cows.
- James Kent from Blarney, Co. Cork: James operates a spring-calving pedigree Limousin herd of 170.

Pat and Kevin both explained how they enhanced animal performance and improved herd health, with reduced retained placentas and reduced cases of milk fever. James also discussed how he achieved a focus on improved performance through increased feed efficiency.

Agtech innovation

KEENAN were joined by a host of exhibitors on the day, including Ireland’s leading agtech and farm support service companies Moocall, Herdwatch, InTouch, Samco, Grasstec and Embrace FARM. Exhibitors were able to showcase their latest innovations and farming services throughout the day.

Dr. Mark Lyons, president and CEO of Alltech, also attended the KEENAN Open Day and spoke about the potential of KEENAN.

“I think what’s most exciting about what’s taking place here is innovation, such as changes we can see with the machine, of course becoming carbon accredited and also in the future, you will be seeing KEENAN machines that are able to facilitate even larger herds. There is a lot of excitement now having KEENAN fully part of the Alltech family.”

Want to know more?

Don’t worry if you missed this year’s KEENAN Open Day. You can find all the event highlights here: KEENAN Open Day Highlights
(P.S. We are already busy making plans for next year… #KEENANOpenDay2020).

For more information, please contact us on +353 (0) 59 977 1200 or email keenaninfo@alltech.com.

THE RESULT IS IN THE MIX

Spend more time on things that matter.

Backed by years of independent research, the KEENAN ration has been shown to deliver increased herd performance and reduced herd health issues, meaning you have more time to spend on the things that matter.

Results from independent scientific studies on 24,450 MechFiber-fed cows:

- ✓ **53% less assisted calving**
- ✓ **75% less milk fever**
- ✓ **79% less ketosis**

To speak to an advisor, email keenaninfo@alltech.com

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