

Evolution and excellence

The performance of a diet feeder is central to maintaining consistent milk yields and dairy cow condition. The Maher family from Drangan, County Tipperary remain at the forefront of animal nutrition, recently upgrading their diet feeder to the latest offering from Irish manufacturer Keenan

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As long serving customers of the Keenan diet feeder (spanning 30 years), the Maher family recently put its seventh unit into service with the arrival of a current generation Keenan MechFiber 380+. It is the second largest paddle type feeder from the manufacturer's range, benefitting from all the latest innovations and improved features that culminate to deliver the highest possible mix consistency. Also enhancing the operator's experience with a range of conveniences incorporated into its design.

Assessing the background to the Maher's dairy enterprise reveals a

"The herd has grown significantly from the original 17 cows to 230 milkers"

highly professional approach to every aspect of the operation. Run by Donal Maher and his wife Olive, together with son Fiachra, the most discerning standards are applied to every aspect of the milk production process with considerable investment in new facilities, paying dividends in the level of productivity and labour-saving approaches that have been attained.

Rewinding back to 1997, when Donal took over the farm from his father, the operation has grown significantly from the original modest 17 cow herd to its current level of 230 spring calving Friesian dairy cows.

Interestingly, the growth of the herd has not resulted in an increased labour requirement, such is the level of mechanisation and automation employed at farm level, with a total of three Delaval VMS V310 type milking robots being central to this. Donal says, "When I took over the farm, the dairy herd was expanded gradually. Once it reached 170 cows in 2020, there was too much time being spent in the milking parlour, leaving little

time to get on with other work. This is why we made the change to milking robots. By installing the three robots, this allowed us to expand to the 230-250 cow level we are at currently. It is a system that works very well, and we have much more time to concentrate on other things. Working at this level means you need to put everything in place to make sure there is a good work-life balance, yet still run the operation as effectively and productively as possible."

Regular replacement

Keeping abreast of all enhancements in equipment upgrades from the various manufacturers whose equipment serve the farm, the diet feeder at the centre of the operation is no exception. The benefit of regular replacement not only minimises replacement costs, but also ensures a machine offering the latest design features serves the herd's needs. The sheer scale of the operation means there's no room for downtime as Donal points out.

TECHSPECS

Keenan MechFiber 380+

Mixing 6 Paddles

Unladen weight 11,250kg (approximately with variance according to options fitted)

Payload 9,000kg

Volume 24cu.m

Power requirement 115hp

Standard height 3,201mm*

Standard width 2,819mm*

Drive 540 or 1,000rpm

Number weigh cells 4

Discharge Left-hand side only

Tyres 445/45-19.5

Axles Twin, 10-stud heavy-duty, rear steering

*Both height and width can be tailored to farm requirements



The power requirement of the MechFiber 380+ feeder is quoted at 115hp, which is more than adequately satisfied by the Maher's Case IH Puma 220CV Drives' 190hp basic PTO power.

Front Link

First Impression // Keenan MechFiber 380+



Left: The Maher's machine is equipped with standard discharge chute. A conveyor for trough feeding is an option. This machine is specified with the optional LED lighting package for improved feed positioning in low light conditions.



Right: The machine has been specified with a ball and spoon coupling system to ensure compatibility with all the tractors on the farm.

► "We replace the diet feeder every five to six years. This approach means our trade-in still has a strong resale value and the cost of replacement is not as steep. The repayment costs on a new machine are something we have always factored into our production costs and are minimal in relation to the important role of the machine.

"The most recent upgrade has seen our Keenan MechFiber 380 replaced by a new machine, with the trade-in staying local to us with a neighbouring farmer running a similar scale operation to ours. I have no doubt the machine will serve him well into the future, but for us, regular replacement is the favoured approach.

"There has never been any temptation to change from Keenan as they have been flawless over the 30 years we have been using them." The continuing loyalty to Keenan is far from coincidental. Donal appreciates the company's approach that goes far beyond the production of machines. A well proven machine concept is combined with a complete nutritional service managed by modern technology, while still retaining simplicity and user friendliness.

"There are many choices these days when it comes to diet feeders and the tub-type feeders have become very popular. Personally, the paddle type diet feeder is a design I favour over all others. With Keenan, you get so much more than just a machine as there is a complete nutritional service with it as well as technical know-how ensuring the

Above: Specified with the steering rear axle that greatly enhances manoeuvrability and reduces tyre wear. This bespoke machine is fitted with low profile wide tyres and an alternative axle mounting dropping the overall height by approximately 150mm lower than a standard machine.

Below Inset: Great consistency irrespective of whether a full or partial mix is produced is one of the core attributes of the machine.



Left: With a low overall height in relation to its immense capacity, the machine can easily be filled by a standard tractor and front loader combination.

best possible diet mixes are being prepared and fed to the herd. There have been many important improvements in the design over the years. By twisting the angle of the paddles more some years ago, for example, machines mix even better now, and we no longer experience jamming when mixing straw."

The Maher family took delivery of a Keenan MechFiber 380+ feeder in late November 2024. On arrival, the machine went straight into service, and based on its similarity to the previous unit (coupled with the intuitive and user-friendly design) this was simple.

Accounting for the stock numbers on the Maher's farm, a 24cu.m machine is clearly vital to ensure feeding is completed with a

minimal number of loads, in a timely manner. Despite the immense capacity of the machine, it retains compact dimensions and remains manoeuvrable

aided by the optional steering rear axle. This reduces tyre wear considerably, proved on the previous machine.

"Running the previous machine with the steering rear axle means a machine of this size is as manoeuvrable as the much smaller Keenan 170 model I would have run in the past," Donal explains. "It means the machine can access the most confined areas with ease. One really sharp turn to one of our feed passages shows the difference this feature makes; we would not be without it. Also, the six-year-old trade-in left here with plenty of life left in its tyres, meaning it has big advantages in reducing tyre wear."

Personalised machine

Choice of tyres is also something that has been personalised on Maher's machine, running on low profile 445/45-19.5 tyres with 10-stud heavy duty axles. The lower tyres are one way Keenan has reduced the height on this custom-built unit from the standard 3,201mm, allowing operation beneath a low beam in one of the farm's sheds. This not only has



Left inset: Donal Maher and his son Fiachra with their recently delivered Keenan MechFiber 380+ diet feeder.





"The precise nature of the Keenan feeder allows the maximum benefit of feeds"

benefits accessing the farm's lowest building, but also presents a big advantage for loading the feeder with a standard tractor and loader.

Donal explains, "We have never felt the need for a dedicated loader, and can do everything we need using our Case IH Maxxum 150 and LRZ120 loader, which has plenty of lift height and dump clearance for filling the feeder because of its low overall height. We do not use a tine or shear grab either, handling everything going into the feeder with a heavy-duty bucket that works very well for the materials we use."

As the different constituents of the mix are added, the weigh display screen can be rotated allowing the values to be viewed from the loading tractor's cab. In addition, it is possible to relay this screen view to a mobile

Above: Design of the castellations on the paddle faces has been redesigned with a rounded profile over the previous square design to reduce power requirement and improve mixing performance.

Below: Three Delaval milking robots are operated on the Maher farm effectively catering for the milking requirements of the 230 spring calving cows and crucially save labour.

phone ensuring awareness of the operation is maintained in real time.

The most significant difference in the machine's design and working capabilities emerges when the quality and consistency of the mix is assessed. Developing a greater understanding of how the feeder achieves mix uniformity while still retaining a fluffy consistency without excessive chopping, is clearly one of the machine's key attributes. Employing a six-paddle mixing reel, new style castellated paddles have improved mix quality, the design also reduces the demands on the host tractor, which can be satisfied by 115hp. Component wear is also minimised. As the rotor revolves, the paddles lift and tumble the materials across the blades that are positioned across the floor between the five and seven o'clock position. This design results in the fibrous elements being cut to the optimal length, thereby retaining greater digestibility.

Harvesting their own grass silage using forage wagons, the Maher's favour a longer chop length with additional secondary chopping action occurring in the feeder, with also straw added to the mix.

"We are coming to the end of the lactation and because of the milking robots, the cows have a short dry off period. The nutritional benefits of

using a feeder like this means the cows get all they need to extend the lactation," Donal insists. "The chop length achieved by the Keenan is very impressive and even with 50 lit of molasses added to the mix, it is blended so well it's not noticeable."

Positive mixing

Among the diets used on the farm are a blend of grass silage, barley straw, molasses and Eorna Gold. This is composed of pressed barley shells, a by-product of the distilling process and are purchased and ensiled on the farm and often blended with beet pulp, maize meal and mineral constituents. Utilising alternative feeds such as this for the past 10 years, Eorna Gold provides a vital source of starch and protein in the diet with the precise nature of the Keenan feeder allowing the maximum benefit of these feeds.

While the mixing action is very positive, when it comes to feeding out, the machine's design is equally effective, presenting several Keenan specific design elements. Initiating the discharge, the interior panel covering the discharge auger during mixing is lowered. With the auger running the complete length of the machine, material is transferred to the discharge door in an effective and consistent manner. The Maher's



Front Link

First Impression // Keenan MechFiber 380+

► machine has the standard discharge chute. A conveyor is an option, which is more common where troughs are being filled.

The angle of the chute can be altered to ensure the material is positioned at the appropriate distance from the feed wall with the process assisted by optional LED lights. "The two LED lights over the feeding door with additional LED spotlights on the top of the machine direct light back along each side work extremely well. Even with comprehensive tractor lighting, it never gets to where you really want it, which is why the extra lighting is vital, making a major difference to feeding as you have full awareness of everything around the machine and can see the feed flow perfectly," Donal explains.

Eliminating reflection

The restyled matt black front covers eliminate the host tractor's work lights reflecting as with the previous gloss white finish panels. Opening

Below inset: The control system screen can have its weight values presented in tandem on a phone screen inside the loading tractor's cabin to aid accurate filling.

Below: The uniformity of the mixing action and access to nutritionists in the preparation of specific diets has paid dividends when it comes to milk yields and cow condition on the Maher farm.

Below inset: The machine is linked to the Keenan InTouch phone app that gives complete access to comprehensive diet mix menus and a wealth of information relevant to the machine's operation.



Left and above inset: The drive chain runs through an oil bath that always ensures the chain is lubricated aiding smooth running of drive components over long term service.

these covers, the chain drive mechanism comes into view with its complete oil bath design ensuring effective and consistent lubrication. The theme of simplicity and durability also runs through the machine's driveline and is classed as a real hallmark of the Keenan design, as Donal believes. "Every part of the Keenan diet feeder is built to last with this design hallmark continuing through to the driveline components that propel the rotor and auger. The previous machine proved how well this design works as there was never any form of problem in the six years it

operated on the farm. It just needed routine maintenance such as greasing and chain tensioning as well as blade replacement,

done in-house as it is a very easy machine to work on."

High levels of technology are very user-friendly and prove to be a real benefit in everyday use. Extending far beyond the actual on-board technological elements and features, remote technological solutions in the form of the dedicated phone app forms the cornerstone of the InTouch system. Adding substantially to the attractiveness of the Keenan concept for Donal Maher, he views the machine's comprehensive control system as a key attribute.

Easy to use

With his long-term operational experience of Keenan machines, he has first-hand experience of the evolution that has occurred in the control system elements. "Having a well-built machine that is up to the job is one thing, but offering full nutritional and technical advice as part of the same package is something that places Keenan in a different league. The technology built into the machine is very easy to operate and can be easily mastered by different operators. The InTouch system Keenan have developed puts everything right in the palm of your hand on your mobile phone, and most importantly is very easy to use."



"Offering full nutritional and technical advice in package places Keenan in different league"



PUTTING HERD HEALTH CENTRE STAGE

KEENAN MechFiber diet feeders protect the vitally important fibre structure in your forage, delivering an 'open' and evenly-mixed TMR that is known and proven to support rumen and overall cow health.



Independent research from across 24,450 dry cows on 277 farms proves that KEENAN delivers health and performance results.

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