

# DAIRYPOWER

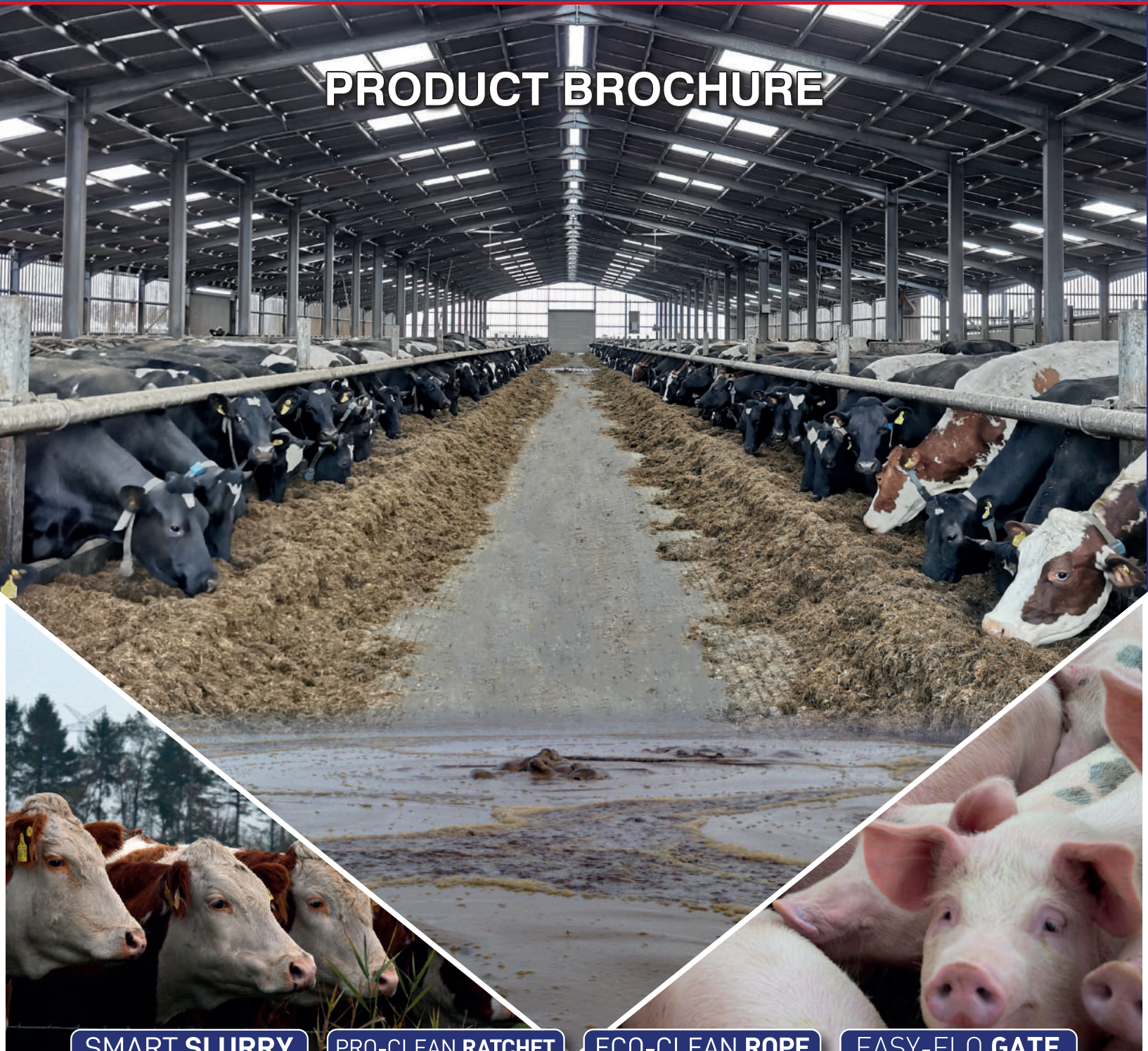
## EQUIPMENT

### SLURRY MANAGEMENT SYSTEMS

SINCE 1973

Slurry Management Specialists for Dairy, Beef & Pig

## PRODUCT BROCHURE



**SMART SLURRY**  
AERATION SYSTEMS

**PRO-CLEAN RATCHET**  
SCRAPER SYSTEMS

**ECO-CLEAN ROPE**  
SCRAPER SYSTEMS

**EASY-FLO GATE**  
SCRAPER SYSTEMS

Safer - Smarter



[www.dairypower.com](http://www.dairypower.com)





## EXPERTS IN SLURRY MANAGEMENT

Dairypower Equipment is a leading Irish designer and manufacturer of high-quality agricultural slurry handling equipment.

Specialising in the best slurry management solutions for cattle, pigs and poultry, Dairypower export their systems to over 35 countries Worldwide.

We are passionate about what we do, continuously looking at ways to improve and develop our products and are committed to helping the future of today's farmer.

Dairypower is a family owned business based in Cork, Ireland and was initially established in 1973 by John O'Donovan as a milking machine company.

In 1985, John began to develop slurry management solutions, starting with, the now, market leading Pro-Clean Hydraulic Ratchet Scraper System. The Smart Slurry Aeration System was introduced into the Irish market in 1998 and was followed in 2010 by the Eco-Clean Rope/Cable Scraper System.

Over the years, John and his son Pat have built brand awareness through developing and manufacturing their unique high-quality systems for the agricultural sector.

Operating out of a manufacturing/distribution site in Ireland and distribution sites in the U.K. and Canada, Dairypower provides customers with a premium level of service all over the globe via it's network of high-quality dealers. Ongoing research continues into developing further efficient systems. With the aim that Dairypower will achieve the status of being the number one company in Slurry Management in the world.





# TO DAIRYPOWER

## DAIRYPOWER PRODUCTS

### SMART SLURRY AERATION SYSTEMS

Pages 4 – 7  
Smart Slurry Aeration System

### ECO-CLEAN ROPE SCRAPER SYSTEMS

Pages 8 – 9  
Eco-Clean Rope Scraper System

### PRO-CLEAN RATCHET SCRAPER SYSTEMS

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Pro-Clean Scraper System

### EASY-FLO GATE SCRAPER SYSTEMS

Page 12  
Easy-Flo Backing Gate Scraper System

### CATTLE CLEAN BRUSH SYSTEMS

Page 13  
Cattle Clean Cow Brushes



*Giving you the best in slurry management solutions  
and more...!*





# SMART SLURRY

## AERATION SYSTEMS

# SLURRY

The Dairypower Smart Slurry Aeration System is established as being the most cost-effective and environmentally friendly method of keeping slurry in a homogeneous pumpable state in the dairy, beef and pig industries.

The system introduced to the Irish market in 1998 is now a market-leader with over 3,500 systems in operation throughout the world.

Each system is custom designed to the specific size and shape of your storage facility. Regardless of the slurry density, the Smart Slurry Aeration System is configured to ensure you get optimum performance, leading to complete consistency of the slurry and the even distribution of nutrients.

The system works on a low-pressure, high-volume basis, with our robust, energy-efficient pump and drive unit supplying air via the Dairypower patented rotary valves to outlet branches fixed to the base of the storage facility. Each outlet branch sequentially releases the air for a set period of time, with the rising air bubbles mixing and aerating the slurry to create a vastly beneficial aerobic environment with no need for further agitation.

### WHAT YOU GET

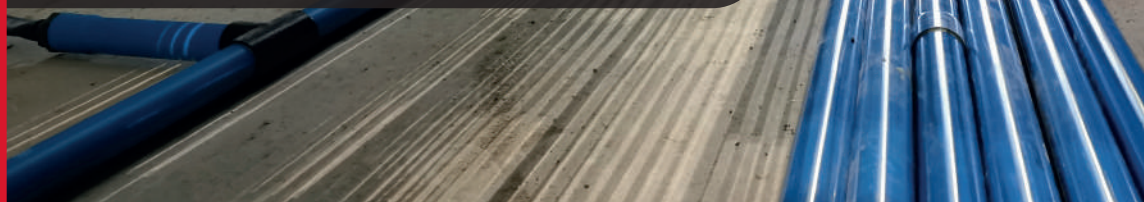
**A long-life, fully automated and efficient slurry management system**

- Easy-to-use electronic control box
- Quiet, Energy efficient pump and drive unit
- Non degrading pipework - with 10 year limited warranty
- Patented rotary valves
- Dairypower's extensive knowledge and experience of slurry aeration
- High-quality support and service
- Return on Investment - on average 4-6 years
- Peace of mind - No planning... No dangers... trouble free slurry



*With having 6 months slurry storage and on a fully slatted robotic system with cows living in 365 days a year, aggitating our slurry would almost be impossible. We are now so happy! Having installed a Dairypower Aeration System, we have seen savings in labour and fertiliser cost. The quality of our slurry is the same all year round, which means we can pump it any time we wish. Without the Dairypower Aeration System in place we could not run this unit efficiently... I would recommend the Dairypower Smart Slurry Aeration to any farmer...*

*Mark Davies - Wales*

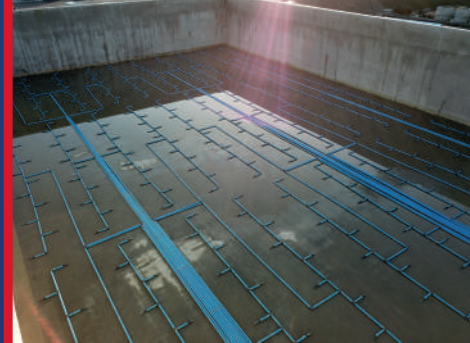




# DAIRY AERATION

## MAIN BENEFITS

- Can be retro-fitted into any tank, regardless of size and structure :
  - ✓ Standard concrete storage
  - ✓ Under-slat storage
  - ✓ Round tanks
  - ✓ Lined lagoons
- Built to last :
  - ✓ Non-degrading uPVC pipework
  - ✓ Stainless steel casing and fixings
  - ✓ Highest-quality manufacturing
  - ✓ Systems in operation for over 25 years!
- Low-operating cost & minimal maintenance
- Fully automated system - set the digital control box to run the desired number of sequences for your slurry and you never need to intervene again
- Lowers emissions, reduces odours and carbon footprint



It's time saving, fuel saving, with no agitation, you just drop the pump and go!  
The slurry consistency and quality we get is big, your not hauling just water or just solids...  
when we first spread it on our field it was on a saturday and by the monday morning the crop was  
already 3 inches tall! Now that was an eye-opener! Out of everything we've done here with our new  
build and 140ft round tank, the DairyPower system is the product i'm most excited about...  
I'm 100% satisfied... it's a great system!

*Dave Vandenbraak - Ontario, Canada*







### CONVENIENCE

Slurry, ready when you are...

- Never agitate your slurry tank again!
- No pre-planning - your slurry is always ready to go
- Hassle free – take whatever you need... whenever!
- Homogeneous pumpable state 365 days a year
- No blockages – completely consistent slurry

### HEALTH & SAFETY / ENVIRONMENTAL

Safer for the farmer, livestock and the environment

- Eliminates build-up of dangerous gases like hydrogen sulphide ( $H_2S$ ) and methane ( $CH_4$ )
- Better air quality - Reduced odour, even when spreading
- Reduces methane emissions and ammonia ( $NH_3$ ) concentrations
- No more diesel emissions or mechanical dangers from running tractors and agitators
- Reduces carbon footprint



With the Dairypower Aeration System there's no more work in agitating slurry!  
It's fantastic to have the option to take out two or three loads of slurry at any time.  
It makes looking after our smaller paddocks an ease.  
My system was installed in 2007 and it has worked faultlessly...  
I wouldn't and couldn't be without it!

*Mark Drohan - Ireland*

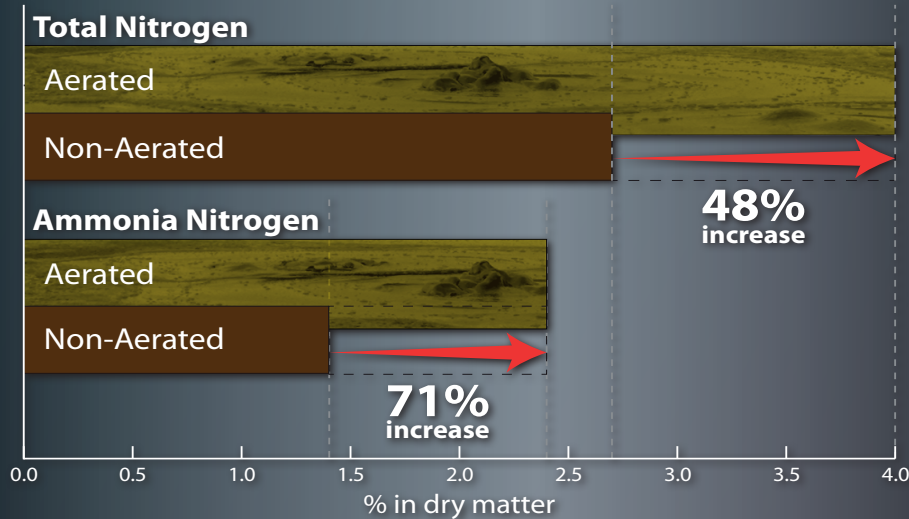


# DAIRY AERATION

## NUTRIENT IMPROVEMENT

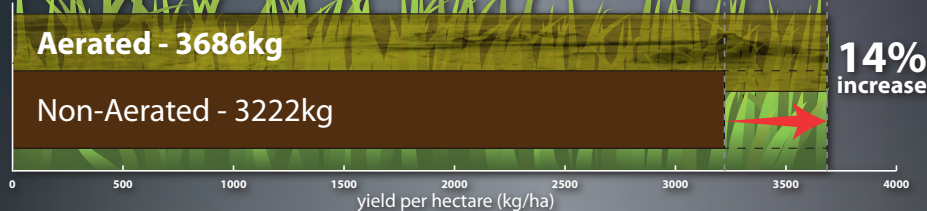
- Increase Ammonia Nitrogen by 70%
- Increase Total Nitrogen and Potassium by 48%

### NITROGEN CONTENT COMPARISON



- Consistent nutrients throughout the entire tank
- Reduce fertiliser and fuel costs
- Increased grass/crop yields

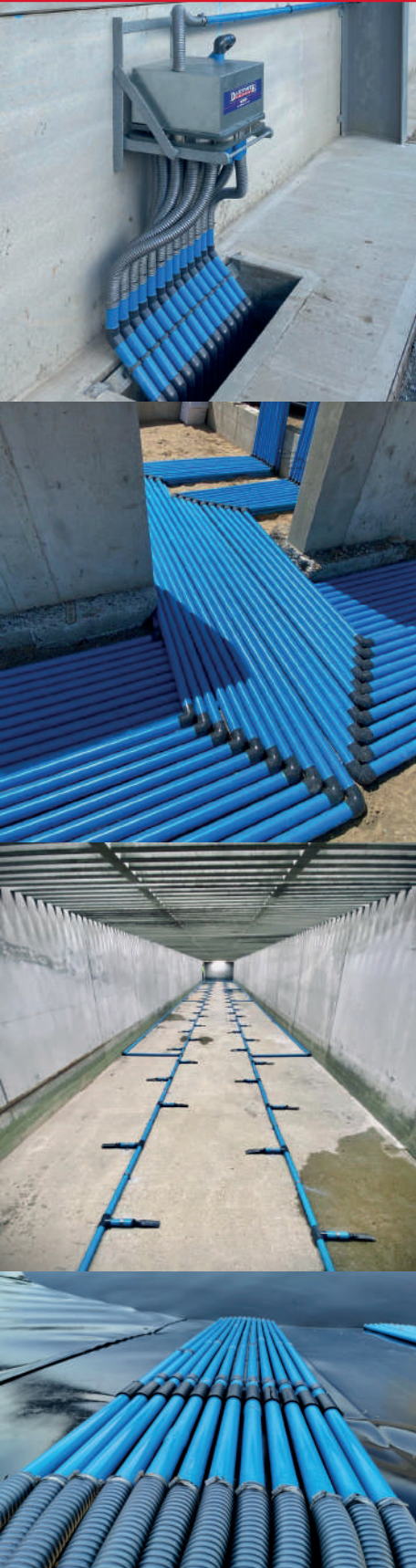
### GRASS REGROWTH / YIELD COMPARISON



"We built a new beef barn for 500 Cattle in 2019, and with the tank being fully suspended, agitation was a real worry. We decided to install the Dairypower Aeration System... We can't get over the quality of our manure! The first litre is like the last litre when applying to the land... and that's with no form of tractor agitation. For safety and efficiency I would highly recommend this system!"

Carl Vaughan - Wales





## Reduce Methane Emissions

Methane ( $\text{CH}_4$ ) is a potent greenhouse gas (GHG) that is 25 times more harmful to the atmosphere than carbon dioxide ( $\text{CO}_2$ ) and is constantly produced by cattle and pig slurry, due to the anaerobic breakdown of the waste material.

With the introduction of oxygen ( $\text{O}_2$ ) to the slurry via the Smart Slurry Aeration System, the environment of the slurry changes to an aerobic one, vastly reducing the production of methane (in some cases up to 99%\*), making it far better for the environment.

Not only that, the Smart Slurry Aeration System eliminates diesel emissions due to the redundancy of tractor agitators, producing a vastly smaller carbon-footprint and can even be run by green-electricity sources. With a safer, non-volatile atmosphere from aerating the slurry, farmers and slurry contractors benefit from not needing to remove the animals from the barn and are free from the dangers of explosions, fires and poisoning which are associated with the build-up of gases like methane and hydrogen sulphide.

Reduction in  $\text{CH}_4$  emission (by 57%),  
with a decrease in  
total GHG emissions (by 43%)  
with aeration of cattle slurry. <sup>3</sup>

57%  
Reduction  
 $\text{CH}_4$

42%  
Reduction  
GHG

70% to  
99%  
Reduction  
 $\text{CH}_4$

Reductions in  $\text{CH}_4$  emissions of  
70% to 99% after aeration of pig slurry. <sup>5</sup>

$\text{CH}_4$  emissions were 40% lower in the aerated tanks (2.04 vs. 3.39 g  $\text{m}^3$ ).  
The differences in  $\text{CH}_4$  emissions remained after the  
aeration phase had finished.  
No effect was detected for  $\text{CO}_2$ , and no relevant  
 $\text{N}_2\text{O}$  emissions were detected during the experiment. <sup>1</sup>

40%  
Reduction  
 $\text{CH}_4$

42%  
Reduction  
 $\text{CH}_4$

Slurry aeration reduced GHG emissions to 53.3 kg  $\text{CO}_2$  eq.  $\text{m}^3$   
compared to untreated dairy slurry (92.4 kg  $\text{CO}_2$  eq.  $\text{m}^3$ ).  
The equivalent of 42% less. <sup>2</sup>

In the case of aeration with an interval of 1 hour  
of a total of 14.4  $\text{m}^3$  air per  $\text{m}^3$  per day.  
Nitrous oxide and methane emissions decrease by  
14% and 56% respectively. <sup>4</sup>

56%  
Reduction  
 $\text{CH}_4$

1. Research Paper: Low frequency aeration of pig slurry affects slurry characteristics and emissions of greenhouse gases and ammonia

Author: Salvador Calveta, John Hunt, Tom H. Misselbrook

2. Methane, nitrous oxide and ammonia emissions during storage and after application of dairy cattle slurry and influence of slurry treatment

Author: B.Amona, V.Kryvoruchko, T.Amona S.Zechmeister-Boltenstern

3. Amon et al. (2006) 4. Kresse (2009) 5. \* Martinez et al. (2003)

*"We can't get over the consistency of our slurry!  
We have extracted several times with zero issues.  
For me, anybody farming on slats should have the Dairypower Aeration System"*

*Ross Towers - UK*



# SLURRY AERATION

## Slurry Aeration Increases the Value of your Slurry

In every form of livestock production, the question of slurry management arises at some point. It is important to decide up front, when planning a new facility, where and how to store the slurry and how to keep the nutrient content of that slurry, since it determines the fertilising and overall value of the slurry.

A very important nutrient to look at in the regards of the nutrient cycle is nitrogen. Cows consume, depending on their diet, a large amount of nitrogen every day with their feed. But only 25-35% of the consumed nitrogen is excreted into the milk of a dairy cow and about 75-65% is excreted through the urine.

Ideally, we would like to catch all the nitrogen excreted by the cow, store it and distribute it to our farm lands, where it stays in the soil until the crop plants are ready to absorb it again. Even when the slurry leaves the farm and is sold, the value of the slurry will be determined by the content of fertilising nutrients, mostly nitrogen. But, there are a lot of factors along the way where we lose valuable nitrogen, mostly in the form of volatile ammonia gases. It begins in the slurry tank when faeces and urine are stored together. The bacteria from the faeces will degrade the urine urea to ammonia ( $\text{NH}_3$ ). Ammonia is a volatile gas and will leave the tank and emit into the atmosphere. This process lessens the amount of valuable nitrogen inside the slurry.

Bacteria that grow with plenty of oxygen available (under aerobic conditions) generate less ammonia than in anaerobic conditions. In an aerated tank that provides aerobic conditions the nitrogen consuming bacteria will be able to utilise the urea and retain it inside their bodies as organic nitrogen and in the form of soluble nitrate ( $\text{NO}_3$ ) and ammonium ( $\text{NH}_4$ ). Nitrogen converted to ammonium will be mineralised as nitrate too. These forms of nitrogen are staying in the slurry tank and therefore available as crop fertiliser once the slurry is administered to the farms soil.

Organic nitrogen is also ready for plants to be absorbed, that means aerated slurry contains a higher concentration of plant-available nitrogen (PAN). Contrary to that, nitrate and ammonium are very mobile and can be washed off in surface run offs or leach into the ground water, where they contaminate the environment and are no longer available as fertiliser for your crops. That is why PAN is an important parameter for determining the slurries fertilisation value.

In conclusion slurry aeration helps improve slurry quality and value with two important mechanisms. At first, the aeration will introduce plenty of oxygen into the tank, creating an aerobic condition for the microorganisms in the tank to create less nitrogen loss through ammonia emissions. And secondly, the aerobic conditions inside the tank lead to more generation of plant-available nitrogen that stays longer available in the soil and helps prevent loss through washing off more mobile nitrogen forms like nitrate and ammonium.

These two factors increase the overall value of the waste product slurry and helps towards making a dairy facility more profitable.

**Nele Schermeier, Doctor of Veterinary Medicine**

### Sources

Slurry Chemistry – Nitrogen, Phosphorus, & Carbon August 2007 Slurry Management Information Sheet Number 7 - [https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_043440.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_043440.pdf)

Swine Slurry as a Fertilizer Source – North Carolina State Univ. <https://content.ces.ncsu.edu/swine-slurry-as-a-fertilizersource>

Value of Slurry Nutrients – Iowa State University <https://www.extension.iastate.edu/agdm/livestock/html/b1-65.html#:~:text=As%20typical%20hog%20finishing%20slurry,units%20of%20nitrogen%20per%20acre>

Summary Report: Analysis of Aerated and Non-aerated Cattle Slurry Samples. Author: FBA Laboratories, June 2015



*"We are very happy with the purchase of our Dairypower Aeration system.  
Our slurry now spreads like liquid gold.  
The consistency pumps great. Really consistent coverage"*

*Carter Cann - Ontario, Canada*







The Dairypower Eco-Clean Rope / Cable scraper system can be used to efficiently clean up to four passages with the same drive unit controlling all the scrapers.

When one scraper is cleaning a passage the other is backing up, producing a quicker, more productive cleaning cycle.

Our unique 20cm diameter x 20cm deep winch drum has been designed to make your life easier – this design allows optimal lateral movement of the rope / cable as it is being wrapped around the rotating drum. The coiling is made without stress and without excessive friction – which is usually the cause of premature wear of the equipment and rope / cable.

- Our winch unit is fully galvanised including the winch drum.
- Easy access for maintenance and lubrication
- Drum drive shaft mounted on high quality roller bearings – for long lasting durability and smooth operation.
- More freedom in installation location – since the corner wheels can be installed very close to the drive unit without overlapping its footprint.
- Easy to handle safety shield – made of light, durable plastic – to ease cleaning and basic maintenance underneath the drive unit.

### SCRAPER BLADE

We use the same high-quality scraper blades on our Eco-Clean Rope Scraper as we have been using on our Pro-Clean Ratchet Scraper for over 30 years!

- Heavy-duty steel
- Hot-dipped galvanised
- Long lasting
- Animal friendly
- Optimum Cleaning



The main reason we chose the Dairypower Eco-Rope system was for its efficiency and we felt the rope option was very cow friendly system. We have long passageways so the rope system is ideal, as it cleans the passages very quickly allowing us to operate more frequently. I really like the digital control box – it has many options and is very easy to operate.

*Padraig Moroney - Ireland*



# SCRAPERS

- Easy-to-Use Digital Control Panel, which conforms to all international safety standards
- Fully Galvanised Frame with Plastic STS Wheels all fitted with tapered roller-bushes for better resistance and life span
- Corner Wheels are designed for maximum life expectancy
- Can Clean Passages up to 200 metres long
- Unique Double-Winch Option, making it unnecessary for two independent winch units on a two-passage system
- Works off a single or 3-phase motor

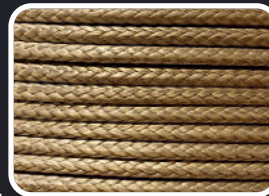
## STS® Rope

A specially produced rope, made from the world's strongest polyethylene-based fibre, for the most demanding of winching operations. It is ultra-strong, flexible, very light and easy to install with its tightly braided fibres protecting against abrasion, ingress of dirt, and chafing, increasing the rope's service life by several fold. This proven winch rope will last longer than any other on the market.

## Stainless Steel Cable

Animal-friendly stainless steel cable with superior wear resistance against stretching, fraying, sawdust and manure! It provides a superior, longer service life than galvanised cable.

**Both the STS® Rope and Stainless Steel Cable are tested in accordance with DIN EN ISO 9001.**



We looked at many scraper options but really liked the DairyPower Eco-Rope System and their local dealer S.A.R.L. Clement helped in the design. They advised us to recess the rope which has been a fantastic decision as our rope lasts a very long time. The system operates every 2 hours and keeps the cows, passageways and cubicles exceptionally clean.

*Gaëc Bas Ralay - Bretagne, France*







Dairypower is the foremost European designer and manufacturer of Automatic Hydraulic Yard Scraper Systems. Our patented scraper system has many unique features that make it the safest and most trouble free-system in the world.

This robust, animal-friendly system can be easily installed with no pre-installation work and all electrical parts overhead away from the slurry. The heavy-duty scraper blade and quarto-folded rail is hot-dip galvanised with a low and smooth profile, designed to prevent animal injuries.

A patented double spring-loaded tongue keeps the rail clean, preventing slurry build-up and allows the scraper to operate in extreme weather conditions. The Pro-Clean Ratchet Scraper has been successfully installed in cattle, sheep, pig and poultry units. The system has also been installed in sewage treatment plants, abattoirs and other industrial projects.

## WIDE RANGE OF SCRAPER BLADES

We've been using the same high-quality scraper blades for over 30 years!

- Heavy-duty steel
- Hot-dipped galvanised
- Long lasting
- Animal friendly
- Optimum Cleaning



### Scraper blades to suit all types of passageways:

- Standard Heavy Duty Straight Blade Scraper
- Universal Scraper
- Double Blade Scraper
- Delta 'V' Scraper Blade
- Hog / Low-Profile Scraper
- Slat Scraper
- Silage Scraper



*In 2018 we as a family decided to invest in the next generation and went ahead in building a 2 Robot Dairy unit. We searched the internet and visited many local farms to seek the best scraper setup for us. The Dairypower systems were on the majority of farms we visited, and all farmers were very happy with their product. We are delighted with our 3 passage system and would highly recommend to any farmer in the market for scrapers.*

*Steven Holden - UK*



# DIET SCRAPERS

- Patented Double Spring-Loaded Tongue, which keeps the track clean, enabling the system to work in extreme climate conditions
- Double-Strength, Quarto-Folded Rail
- Fully galvanised system
- Unique Curved Design to prevent animal injuries
- Internal & External Ram options available
- Easy-to-Use Digital Control Panel, which conforms to all international safety standards
- Fully Automated - set up run times and frequency using the timer settings
- Multi-Channel Running options on passageways
- Manual Override Function
- Animal Safety Features - inc. Cow-Down and Calving modes



In 2006 we built a new greenfield site and installed Dairypower Pro-Clean Ratchet scrapers with Lifting-slats as an added option. 10 years later we expanded and built a new shed mirroring the old building. We were so happy over the years that we again went with Dairypower scrapers, lifting slats and hydromat. These added options really take care with moving my slurry all the way to the tank!

*Martin Kennedy - Ireland*



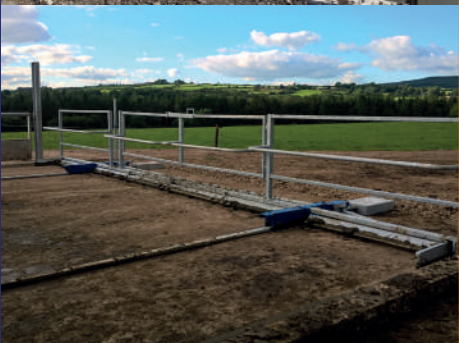


The Easy-Flo Gate integrates an advancement gate with our patented Pro-Clean Ratchet Scraper System.

It has many unique features that make it the safest and most trouble free-system in the world.

Its unique features include:

- Robust, fully galvanised, animal-friendly design
- Cleaning can be configured to clean in either forward or reverse directions.
- The operator can control gate advancement from anywhere in the milking pit.
- The scraper backing gate can be programmed to operate to two fixed distances in the yard to bring the cows to the milking parlour and when the farmer is finished the gate can be returned to the parked position.
- Designed for maximum animal safety as well as maximum cleaning efficiency
- Can be easily installed up to 20 metres wide



We got our Easy-Flo Backing Gate Scraper installed back in 2020 to complement our new milking setup and give us full control over the flow of cattle into the parlour. I love how simple the system is, it's easy to use and does a great job of cleaning the main holding pen after the last cows are in. The slipways in the gate make it safer for us and the option to open up the side gate allows us to manage any separated cows!

*Mark Collins - Ireland*



Dairypower's Cattle Clean Brushes are produced to enhance the cow's comfort, welfare and performance.

When the cow comes into contact with the brush, it begins to rotate providing a gentle massage on the animal.

Some of the advantages of Cattle Clean brushes are:

- Eliminates vast quantities of parasites
- Improves skin perspiration
- Helps to increase milk yield - as it promotes healthier, happier, and relaxed cows
- Easy to install
- Automatically starts with cow interaction
- In-built safety features
- Low-power consumption unit
- Works in all climates
- Replaceable brushes



*In 2018, Richard, his wife Ann and son James took a big step forward in extending and modifying their farmyard to make life easier and benefit cow welfare and slurry management. We installed 7 Dairypower Ratchet Scrapers, a Slurry Aeration System and a Cow-Brush. James says that funnily every time he's around the shed there's a que for the Cow-brush. It's always busy and keeps the cows contented and very clean.*

*The Walsh Family - Ireland*







**SINCE 1973**

#### GLOBAL HEADQUARTERS

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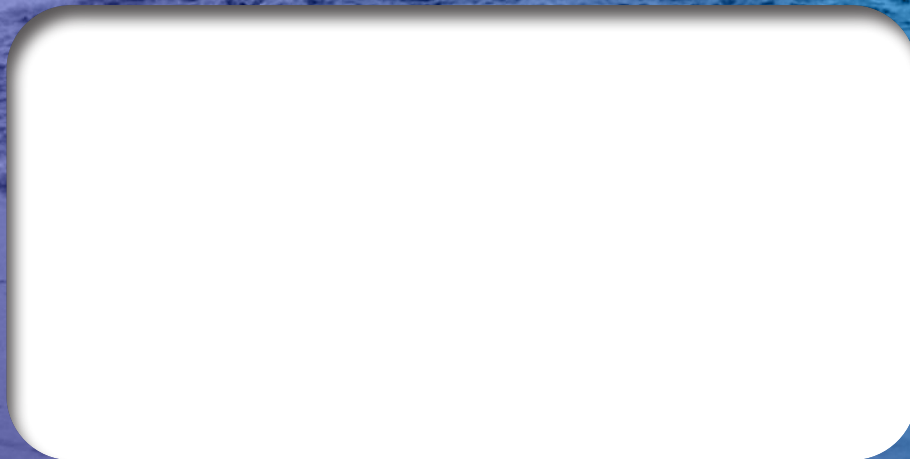
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AERATION SYSTEMS

**PRO-CLEAN RATCHET**  
SCRAPER SYSTEMS

**ECO-CLEAN ROPE**  
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