

Benefits of embracing

Pigs, dairying and all farming enterprises can learn from this manufacturing philosophy

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In devastated, post-war Japan, a tiny manufacturer – Toyota – quickly realised that to compete with the US car giants it would have to work smarter, be more agile and embrace efficiency as a core value. It started to think in terms of lean manufacturing which is defined as “faster, cheaper, better; together”.

So how does lean manufacturing, which has evolved over decades with input from many other manufacturers, relate to agriculture? Well farming, like car manufacturing, utilises inputs through a production process to produce something that a customer wants. The same principles apply whether you are producing a people carrier, a pint of milk or a pig.

There is no Irish farm that can't gain by increasing its effectiveness (“doing the right things really well”) or by improving efficiency (starting a “war on waste”). No matter how good you are, there is another level you can reach. The key requirement is to approach things with an open mind and open eyes.

So where do you start? The first step is that any Lean action must be based on facts, not hunches, hearsay or guesstimates. Real facts come from real data. Benchmark yourself, either by reviewing your Teagasc Profit Monitors, discussion groups or international best practice. Are you

The following questions can help you to establish the facts

- What are you doing?
- How are you doing it?
- Why are you doing it?

Capture the facts

- Who is going to improve it?
- When?

Make things better

striving to reach the industry average or to be in the top 10%? Every journey has to start with a first step, so each ambition is equally valid, depending on the base you are starting from.

To help to understand what is happening, and how it could be improved, tools have been developed. The five fundamental Lean tools are:

- Process mapping – visually putting each stage on paper.
- Physical flow mapping – showing how one stage interacts with others.
- Check sheets – what is going wrong on a daily/weekly basis?
- Run charts – is the problem getting better or worse over a period of time?
- Teams – people working together to improve their business.

Experience has shown that when we document things visually/graphically we uncover connections and see new possibilities. This is especially important when problem-solving as a team as it helps to keep the conversation focused on a particular area and avoids diversions.

It may also highlight an activity we are currently doing which doesn't add value to the final product. If it doesn't add value then why are we doing it? This leads us to the second major area of improvement – the “war-on-waste”.

The war-on-waste isn't simply about reducing the volume going to landfill. It is eliminating anything that is not adding value. If it doesn't add value, it is wasting time, effort, or cost, etc.

A simple example in a farmyard setting is where top-links/“pins” are being shared across equipment. Every time you hitch-up a different machine you have to go and find the top-link and requisite pins, which is a waste of time and effort. Instead, each machine should have its own top-link and pins which always stay with that machine.

The cost is minimal but the saving in time and frustration, especially during the busy season, is priceless. This simple example demonstrates how a war-on-waste can deliver real benefits. There are 7+1 categories of

Table 1: Characteristics of waste

Waste	Description	Solution
Transport	Walking 20% of pigs a long distance to loading ramp	Build a second loading ramp on the opposite side
Inventory	Purchasing three months of vaccine at a time, tying up valuable cashflow	Purchase monthly as required
Motion	Staff walking back and forth to workshop for equipment during the day	New equipment locker in the centre of pig unit
Waiting	Can't start washing pig pens until the staff arrive in the morning	Install a sprinkler system on timer to start early morning pre-wash
Over-processing	A percentage of pigs have excess backfat at slaughter	Reduce energy content by feeding a later stage diet
Over-production	Pigs are stocked above the optimum space allowance	Reduce numbers to the required space to maximise performance
Defects	10% pigs have pneumonia lesions which causes lower growth rate and lower sale wt.	Review vaccination program and the management of sick pigs

a 'Lean' philosophy

wastes identified in Lean.

The Lean wastes are described as "7+1" with the "+1" being people. People are the greatest potential asset to any business. Developing the person will add real value to the business whereas not developing you/them is a waste of very valuable potential.

Seven wastes

- Transport
- Inventory
- Motion
- Waiting
- Over-processing
- Over-production
- Defects

The Teagasc pig department in conjunction with the Department of Agriculture, Food and the Marine and Bord Bia have been running a pig lean programme on-farm for the last two years. This involves benchmarking (physical, financial, labour efficiency) individual farms against the other participants to highlight potential for improvement.

The individual farms then receive a concentrated, tailored, lean implementation programme over a six- to seven-month period with the resulting savings generated quantified in a final report. To date, the programme has run very successfully and we hope to begin a third phase soon with an added formal learning module from Trinity Business School.

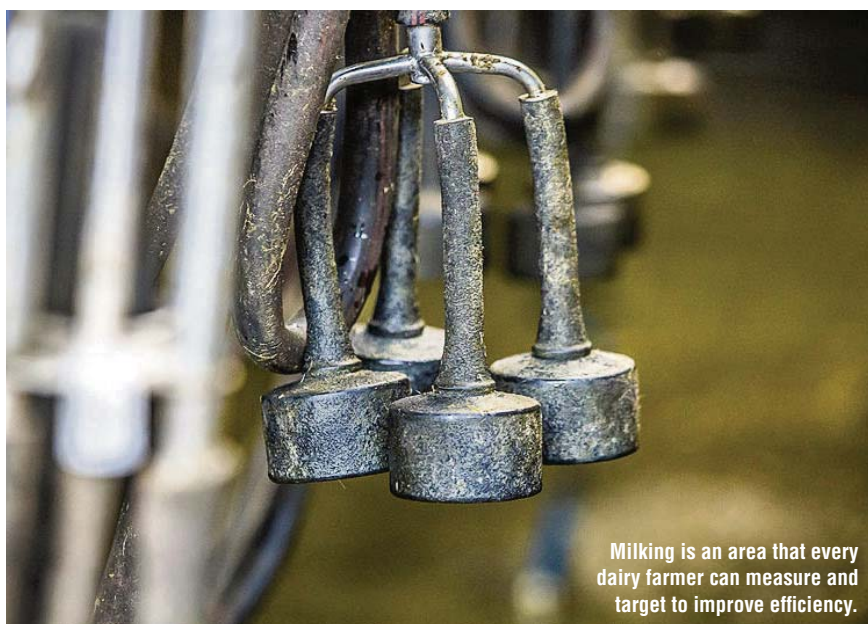
One of the Lean programme farms recently won an EU innovation award (EUPig) for its Lean initiatives and one of the simpler ones is described in the case study.

In conclusion, Lean in the initial stages is not a complicated system. It requires reviewing your business with a fresh set of eyes and ensuring that every action is improving efficiency and adding value to the end product. As Taiichno Ohno, a lean advocate proclaimed: "Progress cannot be generated when we are satisfied with the existing solutions."

Michael McKeon is a specialised pig advisor and a Lean Black Belt practitioner. For more information on Lean, view the Teagasc pig department and Trinity Business School Lean webinar: <https://www.teagasc.ie/publications/2020/lets-talk-pigs-webinar---becoming-lean---a-guide-for-pig-farmers.php>

Case study farm: a mixed dairy and pig enterprise outside Mitchelstown, Co Cork

- Improvement area: as a home-miller they needed to retain samples of feed minerals but the samples were stored in an ad-hoc way making it difficult to locate samples quickly.
- Requirement: a simple system to enable someone to locate a particular sample quickly and easily.
- Solution: implement a 5S system (sort, set-in-order, shine, standardise, sustain) by sorting all individual samples into boxes by month, for a six month period and place in a row. Then with each new month select the oldest month nearest the door, discard contents, re-label with new month and place the box at the back of the row.



Milking is an area that every dairy farmer can measure and target to improve efficiency.

Lean in dairying

On a recent episode of *The Dairy Edge* (week beginning 10 August), labour researcher Marion Beecher and head of continuous improvement at Dairygold Co-op John Murphy discussed the role of Lean practices on dairy farms.

John documented the process of integrating Lean across all sectors of Dairygold Co-op and the rollout to its suppliers and the resulting benefits including improved communication, work processes and safety while reducing waste and increasing efficiency.

Marion gave practical examples of Lean on farms including a case study that measured the efficiency of the milking process where savings of

20 minutes per milking were made, which accounts for in excess of 180 hours annually. Because milking accounts for the largest proportion of annual farm tasks, Marion suggests this is an area every farmer can measure and target to improve efficiency.

How you can listen?

Teagasc website: <https://www.teagasc.ie/animals/dairy/the-dairy-edge-podcast/>

iPhone: <https://itunes.apple.com/ie/podcast/the-dairy-edge/id1334107842?mt=2>

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