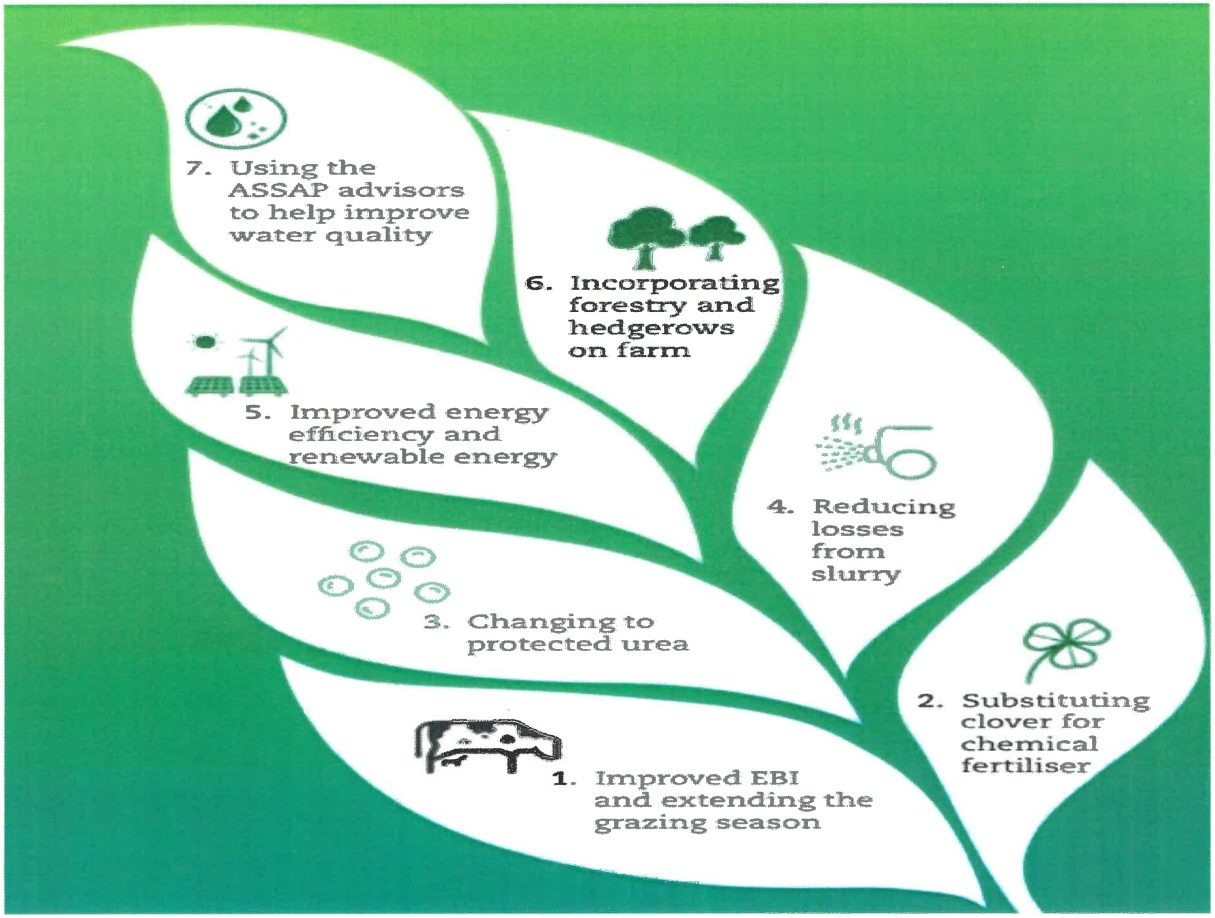
Future Farm Walk

John Ryan,
Gortnahoe,
Co. Tipperary

Programme Objectives

- Productivity & Efficiency
- Environment
- Welfare: animal & farmer
- Health

7 Steps
to Improving Farm Sustainability



Anthony & Associates Ltd.
Agriculture Consultants

Title:
Grassland management

Client:
John Ryan,
Boulick,
Gortnahoe,
Thurles,
Co. Tipperary.

Scale:	Date:
1:200	07/07/2010
Drawn By: Dave Smyth Dip. Geo-Surv	Project No.: 10 - 210

NORTH

0 250 500

Total area under grass:
84.11 Acres
34.039 Hectares

Paddocks (Home farm)		
Number	acre	hectare
1	3.90	1.579
2	3.90	1.577
3	3.89	1.575
4	3.89	1.574
5	3.86	1.562
6	3.14	1.271
7	4.22	1.707
8	3.89	1.573
9	3.90	1.578
10	3.89	1.573

Paddocks (Home farm)		
Number	acre	hectare
11	4.08	1.652
12	4.12	1.669
13	4.14	1.674
14	4.40	1.780
15	4.37	1.770
16	4.26	1.722
17	4.45	1.799
18	3.42	1.382
19	4.45	1.800
20	3.98	1.612
21	3.97	1.606

Useful conversions

Distances

1m = 3.28084 feet
1m = 1.09361 yards
1km = 0.62137 miles
1cm = 0.39370 inches

Area

1ha = 2.47104 acres
$1m^2 = 10.76391$ feet^2
$1m^2 = 1.19599$ yards^2
$1km^2 = 0.38610$ miles^2

Area under ditches
0.53 acres
0.216 hectares

Area under Yard/Dwelling
2.57 acres
1.039 hectares

Area under farm roads
1.57 Acres
0.635 Hectares

Total area not under grassland
4.67 Acres
1.890 Hectares

Farm Details

Land Farmed (ha)	64
Milking Platform (MP-ha)	34
Cow Numbers (LU)	140
Replacements (LU)	22 in calf heifers, 23 0-1
Overall Stocking Rate (LU/ha)	2.5
MP Stocking Rate (LU/ha)	4.25
Labour	John and his father Tom, relief milker
Facilities	20 unit parlour, 140 cubicles, slurry storage for 16 weeks for 180 cows plus followers
Plan	550kgMS/cow,clover,reduced nitrogen use.

Cow Genetics and Performance

Bull	Team
• EBI	€274
• Fert sub index	€112
• Milk sub index	€104
• Bulls in team- FR4547, FR4728, FR5133, FR4788, FR4414, FR4439, FR2424, FR4815	

Fertility Performance

- Calving Interval days - 393
- 6-Week calving rate % - 81
- Empty Rate % - 15
- Calving Season weeks – 15 wks and 6 days

Current Performance

- Milk Yield l/cow 17.78l
- Fat % 5.02
- Protein % 4.09
- Milk Solids (kg) 1.67
- Meal (kg) 4

Milk Solids Yield kg/cow/year

- 2016 - 473
- 2017 - 482
- 2018- 510
- 2019- 529
- 2022- 550

Grass Performance

Soil Fertility

- % Optimum pH 71
- % Optimum P 66
- % Optimum K 42
- % Overall fertility - 37

Current Performance

- AFC kg DM/ha 789
- PGY kg DM/ha 1900
- Rotation Days: 29
- Growth 50
- Demand 38

Grass Growth

- 14.7tons DM /ha 2020

- 15.5 tons DM/ha
- Nitrogen
- Clover

Stocking Rate

- 2. 3LU/ha – 2019

- 2.5 LU/ha

Water Quality & ASSAP

• Ireland has been set a target by the E.U. Water Framework Directive (WFD) of achieving 'Good Status' for all waters

• Recent EPA water quality reports highlight deteriorating water quality due to increasing nutrient levels, including nitrate, in waters

• The Agricultural Sustainability Support and Advisory Programme (ASSAP) service is available in 190 Priority Areas for Action (PAA's) and provides advice and mitigation actions to farmers to help minimise nutrient losses to waters.

Introduction

In Ireland, all water policy and management is led by the Water Framework Directive. Under this Directive, Ireland has been set a target of achieving 'good status' for all waters in Ireland by 2027. However, despite a lot of good work over the last 20–30 years we are falling short in achieving this target and water quality has declined in recent years.

Nitrate

One of the areas of concern highlighted by the EPA is the elevated levels of nitrate in waters. Estuaries, coastal waters and groundwater drinking supplies, particularly in the south and east of the country, are at risk with agriculture providing 85% of the nitrate load in rural catchments. Estuarine waters are in the poorest condition with only 38% of these meeting the WFD water quality targets, and are especially sensitive to elevated nitrogen concentrations. There are a number of factors influencing the quantity of nitrate lost to waters. These include the type of land (free draining/poorly draining soil), the management of the land (intensive/extensive farming and enterprise type) and the weather (soil temperature, rainfall and drought). Typically, in Ireland the catchments where elevated levels of nitrate occur are in the freer draining and more intensively farmed catchments in the south and east of the country. It is in these catchments that the EPA have indicated that reductions in the overall tonnes of nitrogen lost to waters is required (Figure 1).

ASSAP — providing advice to minimise nitrate losses

The ASSAP programme is made up of a group of 30 advisors (20 Teagasc jointly funded by the Department of Housing, Local Government and Heritage, the Department of Agriculture, Food and the Marine, and 10 funded by the dairy processing co-ops). These advisors are available to provide a free and confidential advisory service that farmers in a PAA can avail of on a voluntary basis. Where nitrate is a pressure on water quality in a PAA the advisors will discuss options for mitigating the diffuse losses of nitrate with farmers. To minimise nitrate losses, farmers can focus on improvements in nitrogen use efficiencies, applying nitrogen fertilisers at the right times with particular attention given to weather conditions and soil temperatures, applying nitrogen at the right locations on the farm by avoiding critical source areas and focusing on fields that have recently been reseeded and have good soil fertility, and applying the right fertiliser type, as well as utilising low emissions slurry spreading equipment, protected urea, incorporating white clover and matching the rates of nitrogen applied to crop demand.

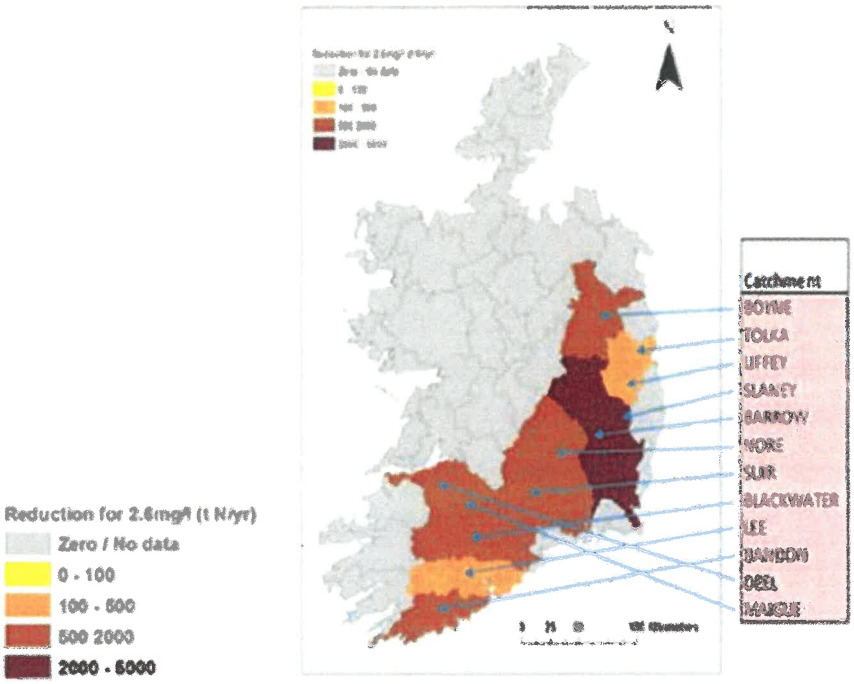
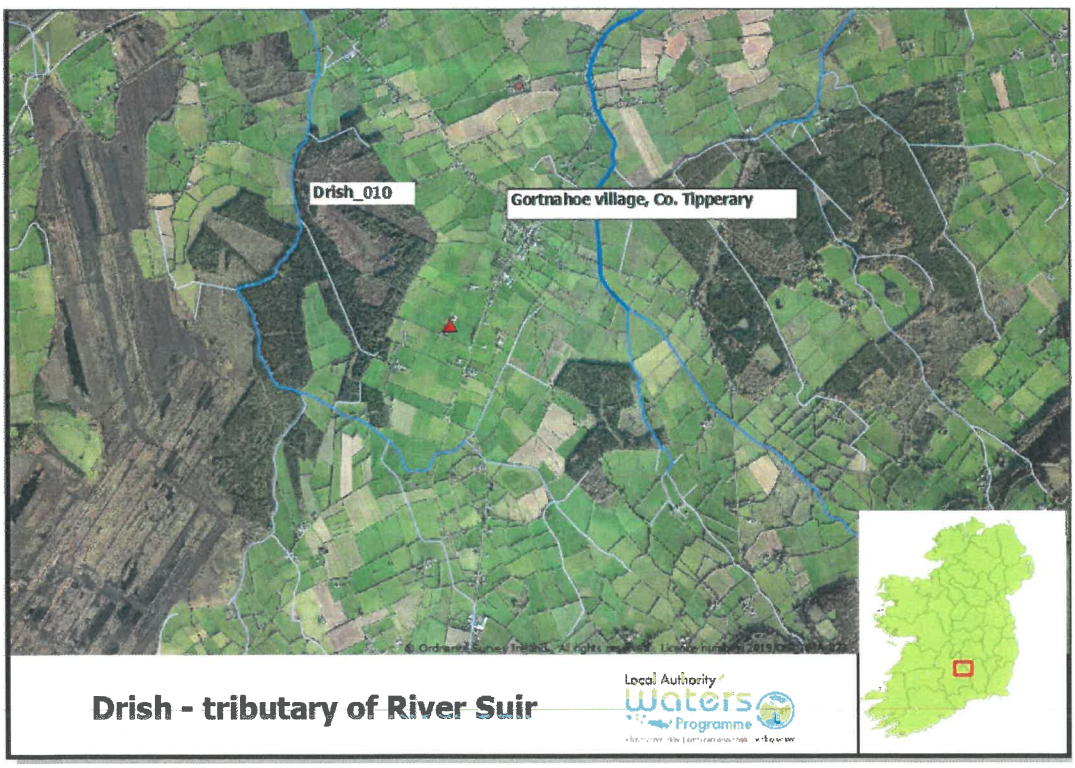


Figure 1. *Map indicating catchments where a reduction in nitrogen losses is required. Source: EPA*

Water Quality in John's Area

Location of Signpost Farm

The farm is located south of Gortnahoe village, east of Thurles in Co. Tipperary. It is in the catchment of the Drish river (Drish_010). The Drish river flows northwards towards Moyne before turning south and flowing into the Suir south of Thurles.



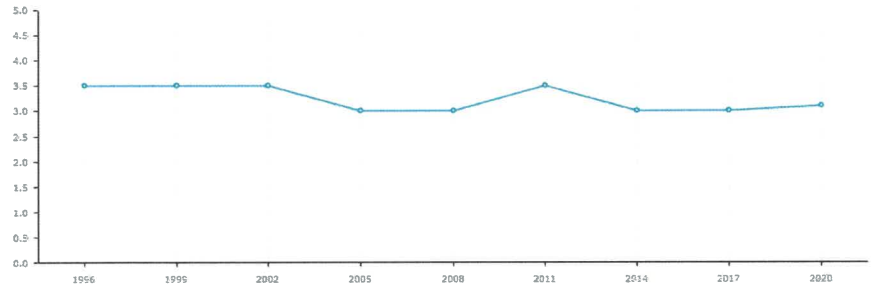
The majority of the farm appears to be located on well-draining soils south west of the village of Gortnahoe, with forestry plantations and peat harvesting on the poorer draining peat soils west of here.

Water Quality

The farm is located in the headwaters (close to the source) of the Drish. There is an ecological monitoring point (Q monitoring site) at the bridge just upstream of Longfordpass bridge. This location is approximately 2 km from the Signpost Farm.

The status of this water body (Drish_010) is currently classified as Poor. The biology (Q-value system) was last assessed here in 2020. Water quality has been consistently moderate and poor status since the 1990's, see **Error! Reference source not found.**. There are no chemistry monitoring data for this water body, so we don't know what issues are causing the ecology in the river to be at poor status.

Q Value - Chart



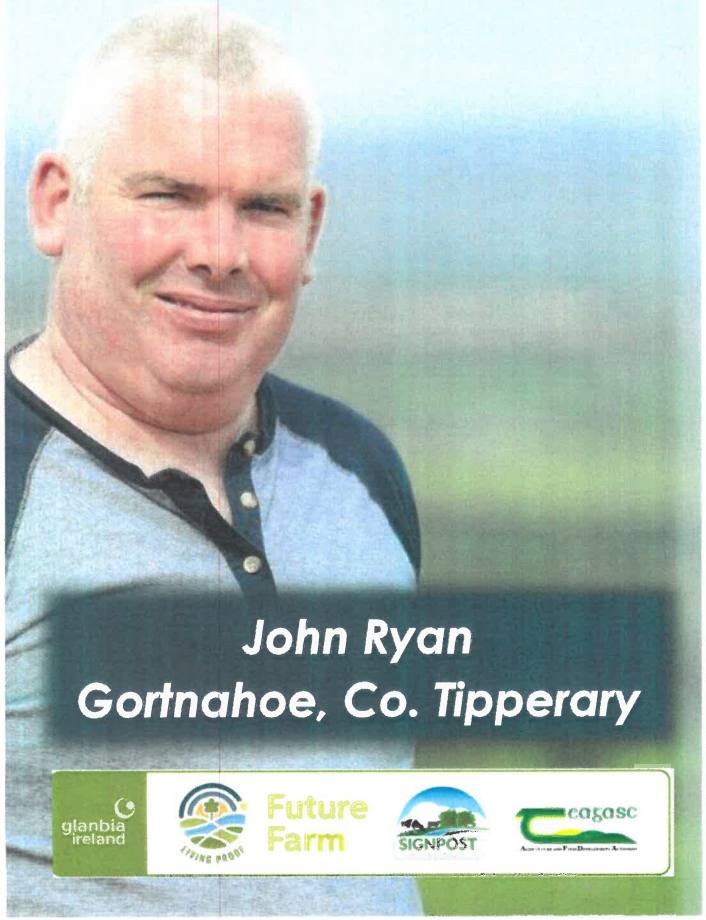
	1996	1999	2002	2005	2008	2011	2014	2017	2020
Result	3.5	3.5	3.5	3	3	3.5	3	3	3.1
Classification	Moderate	Moderate	Moderate	Poor	Poor	Moderate	Poor	Poor	Poor
Q-Value	3-4	3-4	3-4	3	3	3-4	3	3	3*

To view EPA River Quality Surveys please click on *View EPA River Quality Surveys*

Conclusion

Ireland has been set a target of 'good status' by the EU Water Framework Directive for all waters by 2027. However, data from the EPA indicates that water quality is declining with elevated nitrate levels prevalent in catchments located in the south and east of the country. The ASSAP advisory service is free and confidential and is available to farmers in 190 PAAs with advice provided to farmers to minimise the impacts of agriculture on water quality.

SPACE FOR NATURE



John Ryan
Gortnahoe, Co. Tipperary

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Farmland Biodiversity

Biodiversity includes the range of native flora and fauna and the habitats that they live in, which are found on farms.

Irish dairy farmers play an important role in the protection, management and improvement of farmland biodiversity which also contribute to the sustainability of our dairy farms.

Biodiversity on the Farming Platform:

5.6%

Average Field Size:

6 Ha

Plan:

1. Retain
2. Maintain
3. Enhance
4. Create

Hedges, Banks and Stone Walls

A biodiversity baseline taken on this farm as part of a UCD and Teagasc Walsh Scholarship study found that there are **6Km** of hedges and grassy banks and **2km** of stone walls on the farm which account for just over **2%** of the farming platform.

Hedges and banks are networks for nature that provide nesting sites, cover for small mammals and birds, and space for native plants to grow which in turn provide a varied food sources for pollinators and birds.

Stone walls are also habitats and linear corridors for flora and fauna

Hedge Management

When managing hedges the aim is to ensure that they are as tall as possible and that trees such as whitethorns are left uncut to grow and mature. Tall escaped hedges are managed by trimming the sides and leaving the top to grow tall.

Watercourses

There are over **2Km** of watercourses on the farm which account for **1%** of the farming platform.

The watercourses that run through the farm provide further connections for biodiversity and space for flora and fauna to thrive along the banks and waterbed, and in the water.

The protection of watercourse biodiversity also contributes to the protection of water quality.

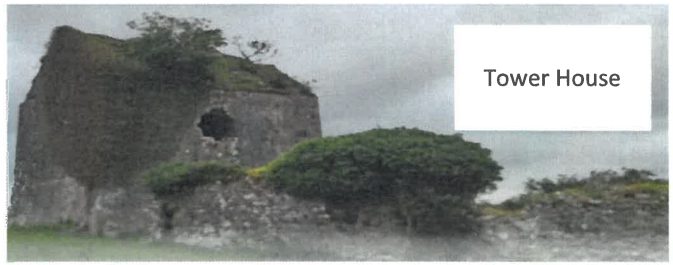
Watercourse Management

Watercourses are fenced off and livestock are not permitted to drink directly from the watercourses.

These practices allow vegetation to grow along the bank and avoids damage and pollution to the waterbed, protecting the in-stream biodiversity habitat.

Tower House

The historic environment also contributes to the biodiversity on this farm. On the Buolick farm a Tower House dating back to the 15th Century is an archaeological monument that is both apart of the heritage and culture of this area but also a feature for biodiversity.



New Hedge

160m of new hedge was planted on this farm last winter using whitethorn plants of Native Irish Provenance. The new Hedge was located beside an existing bank therefore this was an example of both retaining and creating side by side.

This new hedge further adds to the biodiversity baseline of this farm and in time will become a valuable habitat for wildlife.

Farmyard

The farmyard also offers space for nature including shelter for birds.

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Disease Screening Summary & Follow-up Action Report

J And M Dairies Ltd
Boulick
Gortnahoe
Thurles
Co Tipperary

Sample ID [redacted]
Herd Number [redacted]
GI Farm Dev Advisor [redacted]
GI Commercial Rep [redacted]
Vet [redacted]

Vaccination Status			
IBR	BVD	Lepto	Salmonella
Yes	Yes	Yes	Yes

Disease	Date	01/08/2021	Date	29/05/2021	Date	18/03/2021	Date	06/11/2020	Comments
	Result	Grade	Result	Grade	Result	Grade	Result	Grade	
IBR gB (Non Vaccinating Herd)									
IBR gE (Vaccinating Herd)	0.493	POS	0.578	POS	0.74	POS			Vaccination is controlling IBR
Leptospirosis	0.331	POS	0.73	POS	0.685	POS			Vaccination is controlling Lepto
BVD Antibody			0.398	POS					
Neospora	0.136	NEG	0.062	NEG	0.086	NEG	0.195	NEG	Continue to monitor
Salmonella	222.07	POS	254.32	POS	244.52	POS			Vaccination is controlling Salmonella
Ostertagia (Stomach Worms)	0.933	POS	0.780	POS	0.595	LPOS			Moderate level of Ostertagia exposure in the herd
Fasciolosis (Liver Fluke)	0.5672	NEG	1.758	NEG	0.56	NEG	0.1183	NEG	Liver Fluke is not a problem currently - continue to monitor

Follow up actions required for Herd Disease Control **(based on the vaccination data that you have given us)**

Continue to vaccinate for IBR
Continue to control Lepto in the herd by vaccination
Continue to vaccinate cows/heifers for Salmonella during mid pregnancy
Younger milking animals should be treated for Ostertagia if not treated recently - Eprinomectin
No treatment is required for Liver Fluke at present

Advisory Note

LIVER FLUKE - Albendazole can be used to treat milking cows for liver fluke, however there is a 60 HOURS MILK WITHDRAWAL! This will eliminate adult liver fluke as well as adult stomach worms, it will not tackle immature stages of these parasites.

COMMENT: Where cows are vaccinated for BVD, IBR, Lepto, Salmonella; results for these tests may be affected by vaccination.
Results are representative of milking cows whose milk is in the bulk tank at the time of sampling and relate only to the portion of the sample tested.
Antibody levels indicate previous exposure to disease and/or vaccine. All results should be discussed with your Veterinary Practitioner.

PROGRESSIVE GENETICS

Tests in last 12 mths : 6

CellCheck Farm Summary

Milk Recording Date : 03/09/21

Name : JOHN RYAN

Herd ID : [redacted]

Scheme: [redacted]

CellCheck AnimalHealthIreland.ie

Herd Summary - Total Cows Recorded: 140

Somatic Cell Count	Mastitis Control During Lactation	Mastitis Control Dry Period/Calving	Clinical Mastitis
★★★★★	★★★☆☆	N/A	No mastitis cases

Somatic Cell Count ★★★★★

Recorded SCC 03-SEP-2021

157

Target : Less than 200

September Bulk Tank SCC

177

Target : Less than 200

% of Herd over 200

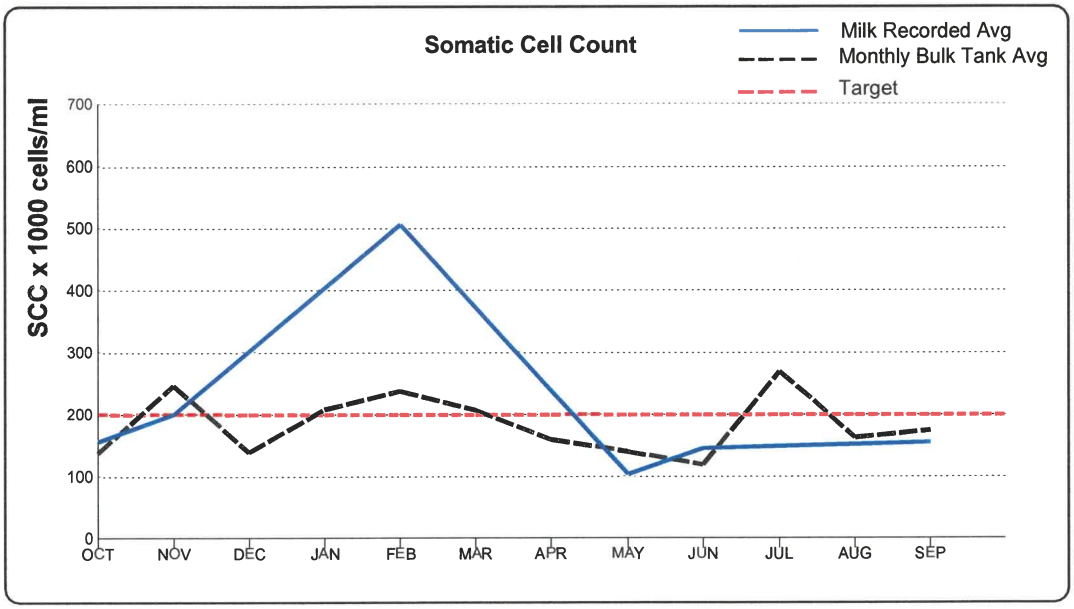
14%

Target : Less than 15%

Avoidable Milk Loss (Ltrs/herd/day) *

52.3

National Herd Rank on SCC: 60%



* This figure is an estimation of the total loss of production from the high SCC cows (>200) in your herd.

Mastitis Control During Lactation ★★★☆☆

Recent Infection Rate since last recording

>200 in latest milk recording (9) and <=200 in the previous milk recording (125) in the current lactation

7 %

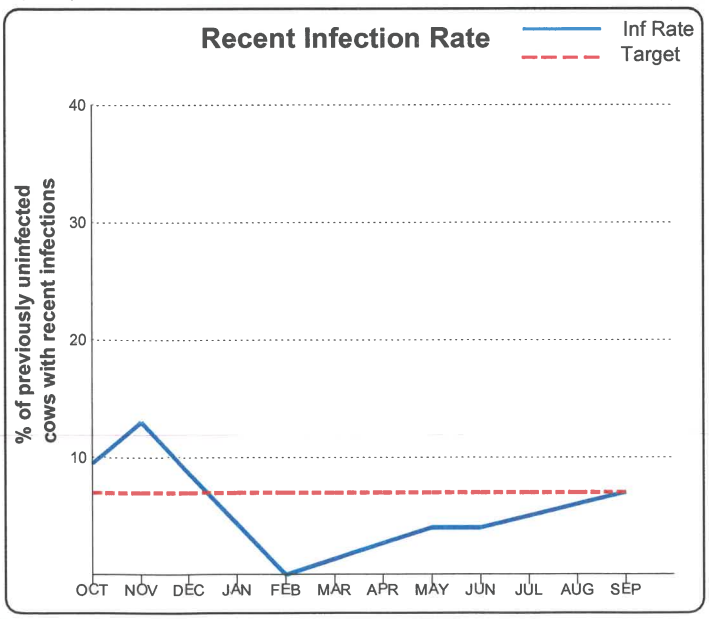
Target : Less than 7%

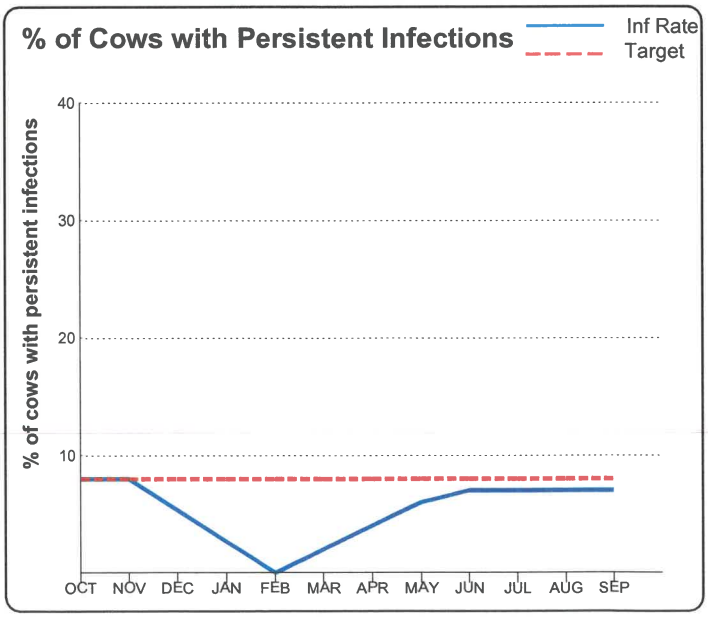
% of Cows with Persistent Infections

>200 in last two milk recordings (10) as a % of all cows recorded for the last two milk recordings (140) in the current lactation

7 %

Target : Less than 8%





PROGRESSIVE GENETICS

CellCheck Farm Summary

Milk Recording Date : 03/09/21

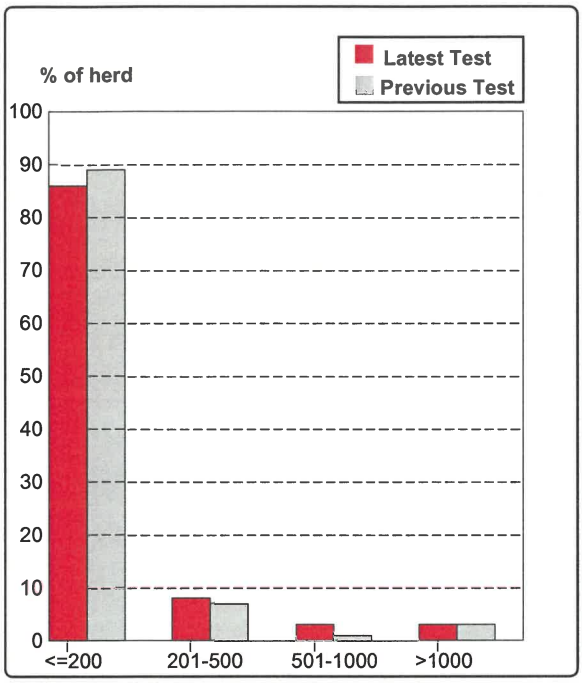
Name : **JOHN RYAN**

Herd ID : [redacted]

Scheme: [redacted]

Tests in last 12 mths : 6

Herd SCC Distribution



Target: *85% of herd less than 200*

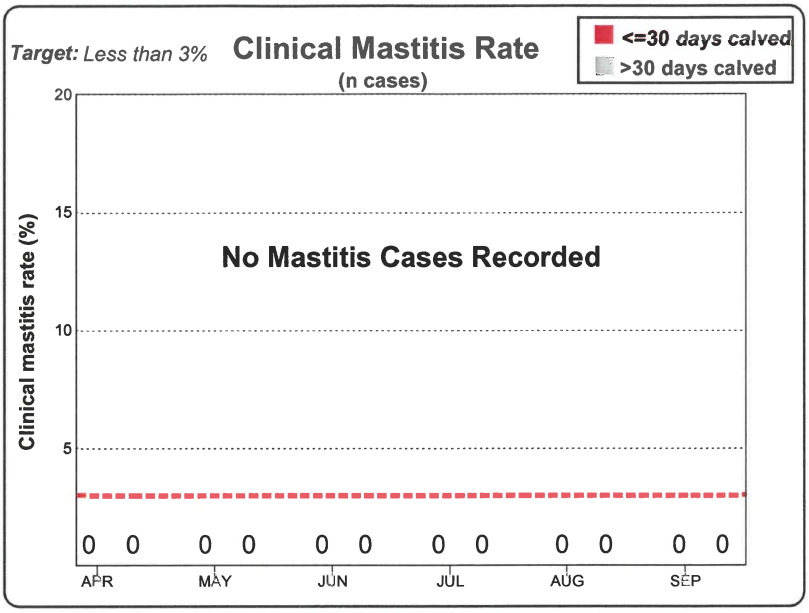
Clinical mastitis

No mastitis cases

Target: *Less than 3%*

Clinical Mastitis Rate

(n cases)



Note: Record treatments in the Record Events section of the ICBF web site www.icbf.com

Mastitis Control: Dry Period/Calving

N/A

Note: Cows with first recording >60 days after calving are not included.

	First Test since calving	All calvings in current lactation
New infection rate over the dry period		
Cows No. of cows calved that had a SCC <=200 in recording prior to calving (0) and >200 in the current recording (0).	N/A ***Target:*** *Less than 10%*	12% 9/74 ***Target:*** *Less than 10%*
Heifers No. of heifers that had a SCC >200 in the current recording (0) as a percentage of all heifers calved (0).	N/A ***Target:*** *Less than 15%*	25% 5/20 ***Target:*** *Less than 15%*
Cure rate over the dry period No. of cows calved that had a SCC >200 in recording prior to calving (0) and <=200 in current recording (0)	N/A ***Target:*** *Greater than 85%*	70% 14/20 ***Target:*** *Greater than 85%*

For information on controlling somatic cell counts and clinical mastitis, check the Cell Check Farm Guidelines for Mastitis Control.

	Farm Guideline No
Somatic Cell Counts	11-12
Mastitis Control: During Lactation	5-15 & Management Note M
Treatments During Lactation	10 & Management Notes B & G
Mastitis Control: Calving/Dry Period	1-4 & 16-20

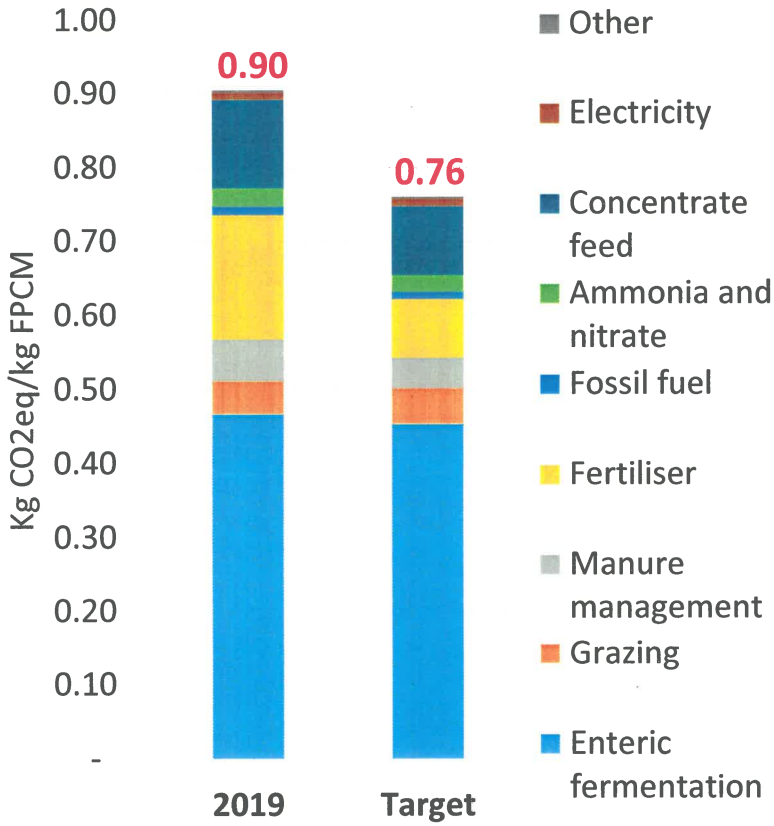
Farm Guidelines book is available from your Co-op and local Veterinary Practitioners.

For further advice on controlling somatic cell counts and mastitis, contact your local CellCheck advisor.
Further information on the CellCheck Programme is available on www.cellcheck.ie

Teagasc
Agriculture and Food Development Authority

John Ryan

Carbon footprint



	2019	Target
Farm area (ha)	64	64
Average cows	137	137
Fertiliser (kg N/ha)	233	186
CAN (%)	100	0
Urea (%)	0	0
Protected urea (%)	0	100
LESS	100%	100%
Spring	80	80
Summer	0	20
Autumn	20	0
Turnout date	20 Apr	15 Mar
Concentrate (t/cow)	1250	1000

Take home message

- ☑ Improve soil fertility and grass utilisation rate
- ☑ Substitute N fertiliser with white clover
- ☑ Replace CAN fertilisers with protected urea
- ☑ Improve herd EBI