Last Audit Date: 05/07/2018

Herd Owner

Certification Valid Until: 26/01/2020

Audit Cycle: 5

Herd Owner Address

Herd: DXXXXXXX

Dear Herdowner,

Bord Bia would like to thank you for providing farm enterprise information during your most recent audit. This enables us to assess the environmental performance of quality assured Irish farms and prepare this **Farm Sustainability Report** for your herd. Your participation qualifies you as a member of the Origin Green programme. All information is kept **strictly confidential** by Bord Bia and is provided here for the purposes of sustainability feedback. Changes can be made through updating your Bord Bia Farm Sustainability Survey at **your next Bord Bia audit**.

What is Origin Green and How to read this report?

Origin Green enables Ireland's food industry set and achieve measurable sustainability targets that respect the environment and serve local communities. For Producers, certification to Bord Bia's Sustainable Assurance Schemes ensures membership of the programme and the aim of the Origin Green programme is to help give Irish producers a competitive advantage in the marketplace.

This **Farm Sustainability Report** provides information and advice under the following headings:

1. Productivity Summary	2. Greenhouse Gas Emissions (GHG)	3. Nutrient Management	4. Grassland Management	5. Safety Aspects

This **Farm Sustainability Report** compares current farm performance against changes since the last audit and similar production systems *(See Figure 1: Layout diagram below)*. This report outlines how your farm inputs & activities contribute to GHG emissions and provides **information & advice** on how to mitigate against these emissions and improve production efficiencies. The **information & advice** is formulated in collaboration with Teagasc and is focussed on measures set out in the Teagasc MACC curve which identifies the measures with the greatest (cost-effective) GHG reduction potential.

Your **Carbon Footprint** is outlined in the table below and further information can be seen on **Page 3** of this report.

Parameter	Unit	Current assessment (Production year 2017)	% Change from previous (Production year 2016)	Average for 125 - 150 cow farms
Carbon Footprint - Dairy Enterprise	*kg CO2 / kg FPCM*	1.11	-16%	1.15

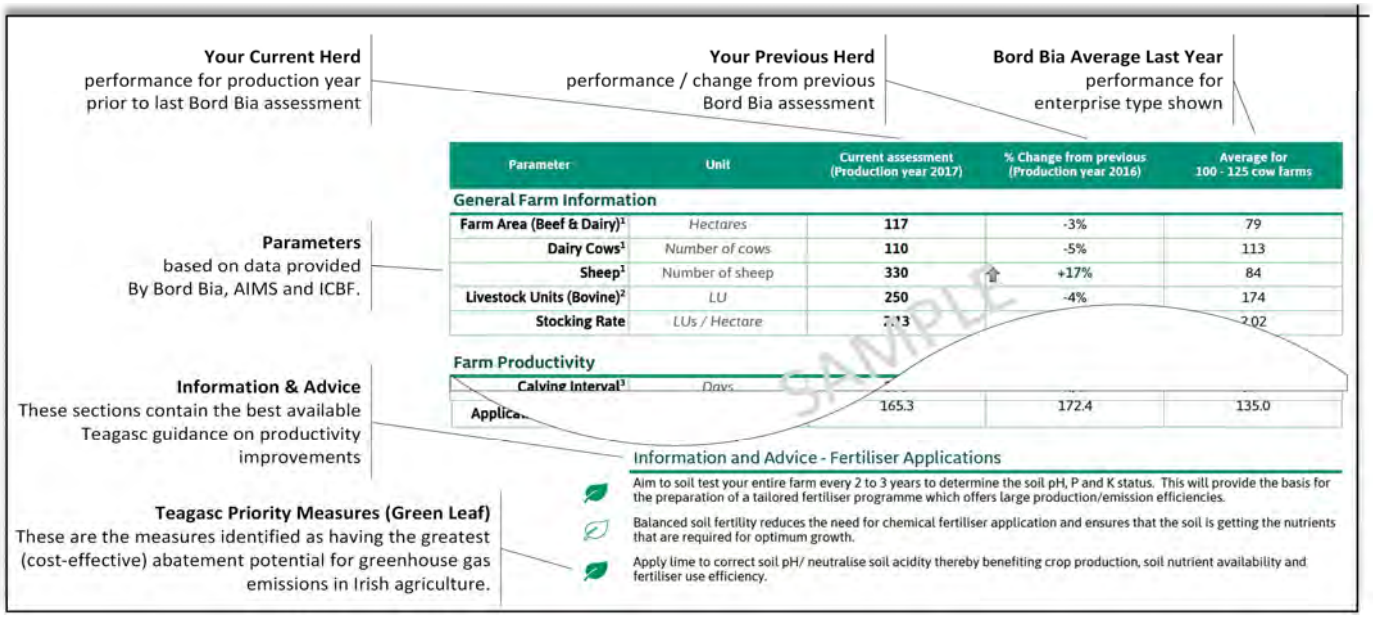


Figure 1: Farm Sustainability Report Layout Diagram (Sample)

1. Productivity Summary

The table below benchmarks performance data from your most recent audit, previous audit and typical values for farms within your category. Values are based on data provided in the Bord Bia sustainability survey, AIMS data and ICBF data. Best available Teagasc guidance on productivity improvements is provided in the **information and advice** panel below.

Farm Description

Main Beef Enterprise: Dairy calf to weanling/store

Dairy Breeding Strategy: Increase Milk Solids

Parameter	Unit	Current assessment (Production year 2017)	% Change from previous (Production year 2016)	Average for 125 - 150 cow farms
General Farm Information				
Farm Area (Beef & Dairy)[1]	*Hectares*	**102**	+6%	89
Dairy Cows[1]	*Number of cows*	**131**	+9%	138
Livestock Units (Bovine)[2]	*LU*	**202**	+2%	208
Stocking Rate	*LUs / Hectare*	**1.99**	-4%	2.10
Farm Productivity				
Calving Interval[3]	*Days*	**365**	**n/a**	385
EBI[3]	*€*	**122**	**n/a**	119
Replacement Heifer EBI[3]	*€*	**134**	**n/a**	151
Days in Milk[3]	*Days*	**284**	**n/a**	294
Annual Milk Supplied[4]	*Litres*	**778,812**	+10%	893,985
Milk Solids[4]	*Total kgs milk solids*	**62,351**	+9%	70,653
Milk Solids / Hectare	*Kgs / Ha (Beef & Dairy)*	**611**	+3%	796
Fat[4]	*Average Milk Fat %*	**4.20**	+0%	4.07
Protein[4]	*Average Milk Protein %*	**3.60**	-0%	3.43

General Information and Advice

- Aim to improve your herd productivity over time. You can do this in a number of ways, including increasing the average age of the herd, reducing the replacement rate and breeding for higher milk solids.
- Reduce calving interval; the target is 365 days. Speak with your Teagasc Adviser and/ or veterinary surgeon to review available breeding records, before forming a plan for your farm.
- Increase the percentage of heifers calving for the first time at 22 to 26 months by focussing on the growth of your replacements.
- Milk recording, and improved usage of the reports generated, has the potential to improve herd performance through the identification of (1) the best animals from which to breed replacements, and (2) the poorest animals for culling.

Data Sources

[1] Data collected at time of Sustainable Assurance Scheme audit within the Sustainability Survey.

[2] Bovine data made available through DAFM Animal Identification and Movement (AIM) database.

[3] Data collected from Irish Cattle Breeding Federation (ICBF).

[4] Data collected from Milk Purchaser (Processor).

2. Greenhouse Gas (GHG) Emissions

The table below outlines the Carbon Footprint calculated for your most recent audit, previous audit and typical values for farms within your category. Calculations have been performed for your herd using the accredited Bord Bia Carbon Footprint Model.
The carbon footprint is the ratio of total greenhouse gases emissions (GHG) to total outputs. It is generated by calculating the GHG from all farm activities as per the data provided in the sustainability survey.

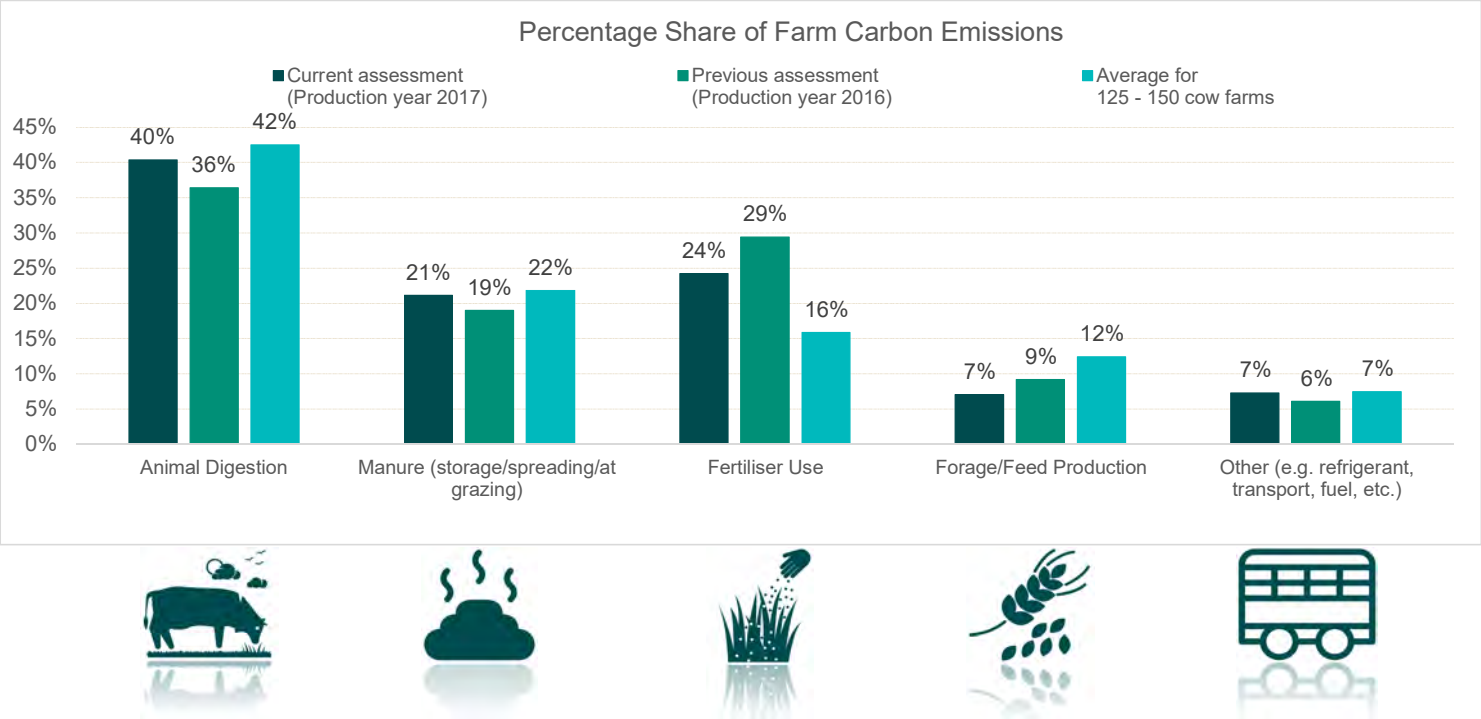
Please refer to the feedback panel for some suggestions on improving your farms carbon footprint.

Carbon Footprint

Parameter	Unit	Current assessment (Production year 2017)	% Change from previous (Production year 2016)	Average for 125 - 150 cow farms
Carbon Footprint - Dairy Enterprise	*kg CO2 / kg FPCM*	1.11	-16%	1.15

Farm Emissions

The graph below displays the distribution of emissions for your most recent / previous audit (where available) and typical values for farms within your category. These values have been calculated for your herd using the accredited Bord Bia Carbon Footprint Model.



General Information and Advice

- Improve the Economic Breeding Index (EBI) of your herd through selecting a team of high EBI AI bulls for use on your best dairy cows.
- Sexed semen reliably produces a 90% sex bias, but can result in poorer conception rates than conventional semen (although not in all herds); it is a viable strategy for generating replacement heifers on dairy farms.
- Increasing the proportion of grazed grass in the feed budget and reducing the proportion of grass silage in the diet improves feed digestibility and quality. Improving the digestibility and quality of feed consumed reduces methane emissions because of improvements in animal productivity as well as reductions in the proportion of dietary energy lost as methane.
- The greatest source of GHG emissions is methane gas (CH4); this is mainly produced in ruminant animals' stomachs and released via the mouth while the animal is ruminating.
- Improving the overall herd health reduces GHG per kg product by reducing the need for replacements and an increase in overall production.

3. Nutrient Management

Your manure handling system is recorded as Trailing Shoe

Slurry Application

Season	Unit	Current assessment (Production year 2017)	Previous assessment (Production year 2016)	Recommended Slurry Spread Timing
Spring	*% Spread in season*	50%	70%	70%
Summer	*% Spread in season*	30%	*n/a*	20%
Autumn	*% Spread in season*	20%	30%	10%

Information and Advice - Slurry Applications

- Slurry is a valuable resource. The majority of the fertiliser value of slurry is in it's P and K content. Target fields with highest nutrient requirements for slurry to offset expensive chemical fertiliser costs.
- Increase the proportion of slurry spread in spring to increase the recovery of nitrogen. Aim for 70% of slurry applied before mid-April and 100% applied by mid-June.
- Apply slurry using a trailing shoe or dribble bar to reduce ammonia emissions and increase the recovery of nitrogen.
- Apply slurry in appropriate conditions to avoid volatilisation and drift to maximize N recovery. Ideally this would be a cloudy, cool, still day/evening avoiding direct sunlight.

Fertiliser Application

The figures in the table below illustrate the **previous calendar years data** provided by you at your most recent farm assessment(s). Where your fertiliser was not on the list, then the most appropriate fertilisers were selected (i.e. closest on N content).

Record	Fertiliser Name (2017)	Quantity (tonnes) (2017)	Fertiliser Name (2016)	Quantity (tonnes) (2016)
Fertiliser 1	**46-0-0 Urea**	**18.0**	**46-0-0 Urea**	**25.0**
Fertiliser 2	**24-2.2-4.5**	**10.0**	**27.5-0-0 C.A.N**	**30.0**
Fertiliser 3	**27.5-0-0 C.A.N**	**20.0**	**18-6-12**	**10.0**
Fertiliser 4	**Ground limestone**	**100.0**	*n/a*	*n/a*
Fertiliser 5	*n/a*	*n/a*	**Ground limestone**	**120.0**

Chemical Nitrogen Application Rates

Parameter	Unit	Current assessment (Production year 2017)	Previous assessment (Production year 2016)	Average for 125 - 150 cow farms
Chem. Nitrogen Application per Hectare	*kgs N / Ha*	158.7	224.7	145.0

Information and Advice - Fertiliser Applications

- Aim to soil test your entire farm every 2 to 3 years to determine the soil pH, P and K status. This will provide the basis for the preparation of a tailored fertiliser programme which offers large production/emission efficiencies.
- Balanced soil fertility reduces the need for chemical fertiliser application and ensures that the soil is getting the nutrients that are required for optimum growth.
- Apply lime to correct soil pH/ neutralise soil acidity thereby benefiting crop production, soil nutrient availability and fertiliser use efficiency.
- Protected Urea can replace both Urea and CAN fertilisers to economically produce top grass yields on your farm at no additional cost, while also reducing both GHG and ammonia emissions.

4. Grassland Management

Improving grass / soil management will support significant increases in milk and meat production. The tables below display some summary information for your most recent audit, previous audits and typical values for farms within your region. **The arrows below indicate your grazing duration compared with typical values for farms within your region.** Please refer to the **information and advice** panel for some suggestions on achieving better soil/grass utilisation.

Grassland Management

Average Grass Growth for county[1]	10.7	*Tonnes Dry Matter / Ha*
Slurry Spreading Zone (from Nitrates Directive)	Zone A	*From Nitrates Handbook (DAFM)*

Parameter	Current assessment (Production year 2017)	Previous assessment (Production year 2016)	Typical for farms in Zone A
Percentage Area Soil Tested in last 5 years	Approximately 100%	Approximately 100%	Approximately 100%
Grass Growth Assessment Method	Visual Assessment	**data unavailable**	Visual Assessment
Grass/Grass Based Forage Proportion of Diet (Freshweight)	97%	97%	**98%**

Cattle Category (Housing and Turnout)

Parameter		Current assessment (Production year 2017)	Previous assessment (Production year 2016)	Typical for farms in Zone A
Dairy Cows	*Reported Turnout (Date)*	1/Feb	28/Feb	04/Mar
	Reported Housing (Date)	20/Nov	1/Dec	12/Nov
	Grazing Season (Days)	↑ 292	↑ 276	**253**
	Housing Period (Days)	73	89	112
Weanlings / Yearlings / Stores	*Reported Turnout (Date)*	15/Mar	17/Mar	23/Mar
	Reported Housing (Date)	1/Nov	7/Nov	11/Nov
	Grazing Season (Days)	↓ 231	↓ 235	**233**
	Housing Period (Days)	134	130	132

General Information and Advice

- Development of pasture management plans (5-7-year cycle) where a combination of different practices (liming, nutrients, grazing, regular reseeding) guarantee balanced applications of C and N to soils under moderate (soil) disturbance.
- Measurement is the first step to managing grass swards better and increasing grass utilisation: what you measure, you manage.
- PastureBase Ireland offers an array of decision support tools to farmers, including the grass wedge, the spring and autumn rotation planner, feed budget, fertiliser and slurry applications and reseed records.
- The Pasture Profit Index (PPI) ranks grass varieties based on the contribution that they will make to overall farm profitability and should be used when choosing grass seed varieties.
- Research has shown that the incorporation of white clover into pasture-based systems can reduce the requirement for nitrogen (N) fertiliser application and can increase herbage dry matter intake and milk production.
- Target ten grazings on each grazing paddock per year. The key to achieving this is to target twenty day rotations from early/ mid-April to early/ mid-August.
- Reduce frequency of use of heavy machinery, which could cause high soil compaction, thus 'reducing' pore space available in the soil matrix, necessary to transport & accumulate extra C (via macro fauna, earthworms, microbes, etc.).
- Improved grassland management relies upon robust grazing infrastructure; suitably sized & shaped paddocks with multiple access points serviced by roadways of sufficient quality & adequate drinking water.

Data Sources

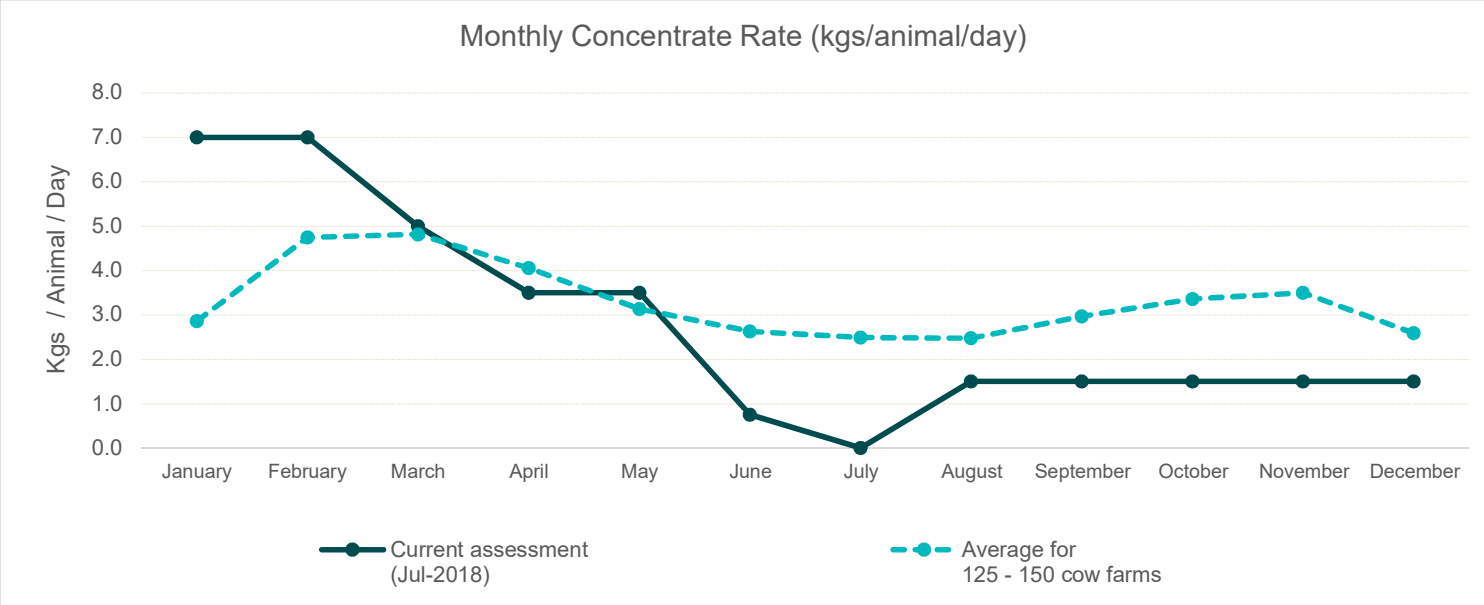
[1] Average annual grass growth figures for each county provided by PastureBase Ireland

Animal Feeding

The Bord Bia Grass-Fed Standard establishes a minimum proportion of grass in the diet to achieve Grass-Fed Certification of 90% for dairy products. The current value for your farm is 97%.

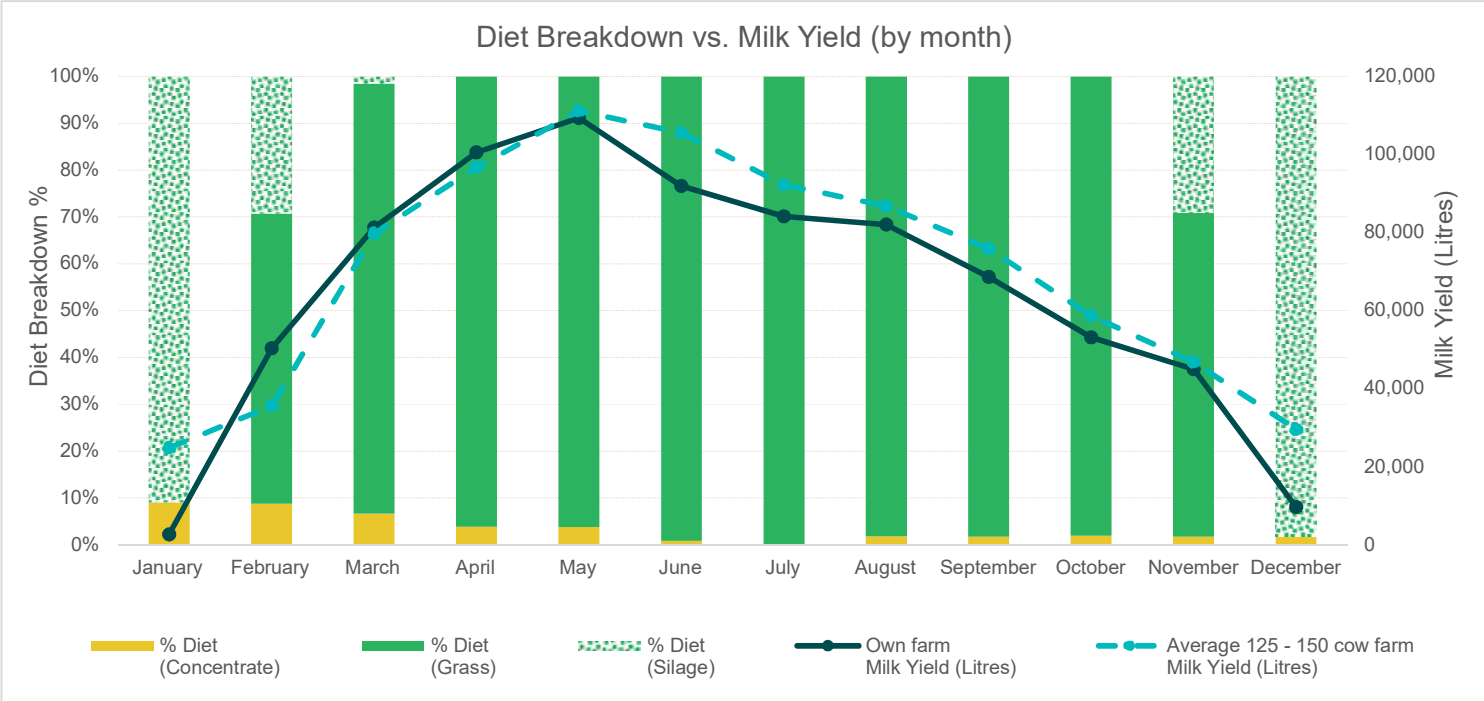
Monthly Feeding Rates for Dairy Cows

The graph below illustrates the monthly feeding rates from your most recent assessment (**green**) and the average feed rate for farms of a similar size (dotted blue).



Diet Breakdown vs. Milk Yield (by month)

The graph below illustrates the monthly dietary breakdown for concentrate / grass / silage on a **fresh weight basis** (each type represented by different colours on each bar). This is calculated from the Teagasc Grass-Fed Model. The **green line** displays your monthly milk yield (in litres) & the **dotted blue** line is the 3 year rolling national average for farms of a similar size with the quantities shown on the right of the graph.



5. Audit Performance - Safety Aspects

The Health and Safety Authority (HSA) is responsible for safety and health in the workplace, including farms. For further information please visit the Health and Safety Authority website (www.hsa.ie/farmaccidents) and also the Farm Health & Safety Section on the Teagasc website (https://www.teagasc.ie/rural-economy/farm-management/farm-health--safety).

The table below is a summary of audit performance against some of the safety aspects from your most recent Bord Bia audit (prior to the closeout of any non-compliances, where raised) with a risk rating for each safety aspect (based on likelihood and severity). Please review the mitigation notes for each aspect, especially where you have a risk rating of Medium or High.

Safety Aspect	Audit Performance	Risk Rating[1]	Mitigation
An up-to-date **Farm Safety Risk Assessment (FSRA)** which, identifies specific hazards, assesses the risk of injury and specifies how these risks are to be controlled.	Full Conformance	Low	Ensure the FSRA is reviewed on an annual basis and updated if there is a significant change to your enterprise, e.g. new farm vehicle, machinery, etc. **Please See** - This can be completed online at www.farmsafely.com or the Farm Safety Code of Practice risk assessment document.
A **notice** visible to all visitors advising of the availability of the FSRA on request.	Full Conformance	Low	Please maintain / install safety notice to ensure all visitors are aware of on-farm risks.
Basic first aid supplies (including eyewash, disinfectant, etc.) are accessible at all times.	Full Conformance	Low	Please ensure first aid supplies are maintained properly stocked and all members of staff can access.
Certain **farm accidents must be reported** to the HSA.	Full Conformance	Low	In the event of a farm accident that must be reported, the Producer must inform the Health and Safety Authority (HSA) and consider the need for additional training. **Please See** - Code of Practice for Preventing Injury & Occupational ill-health in Agriculture (www.hsa.ie)
All **avoidable hazards** (for both humans and livestock) are eliminated or adequately controlled.	Partial Conformance	Medium	Ensure that hazards (for both humans and livestock) are eliminated or adequately controlled, including open / unfenced lagoons, open wells, dangerous agitation points (access and ventilation), low or insecure electric wiring, poorly fenced land bordering roads and railways, inadequately protected machinery, etc.
Overall Farm Performance against Safety Aspects at time of audit		**Good**	Please pay attention to safety on your farm and refer to mitigation actions above where applicable.

Feedback and Advice - Safety Performance Priorities[2]

The Health and Safety Authority (HSA) have identified the following aspects to improve safety on your farm. ✓ where assessed

Priority 1	Breaks on tractors maintained.	☐
Priority 2	Adequate calving and livestock handling facilities.	☐
Priority 3	All PTO's fully guarded (not incomplete).	☐
Priority 4	Slurry tanks/agitation points fully protected.	☐
Priority 5	Bales/bagged silage properly stacked.	☐
Priority 6	Good general housekeeping and yard tidiness.	☐

[1] The Risk Rating is determined for each Safety Aspect using the likelihood of an issue (from your most recent audit performance) and the severity of a breakdown against each aspect.

[2] The Health and Safety Authority can be contacted on LoCall: 1890 289 389 for information on filling out a Farm Safety Statement.