Teagasc
Advisory
Newsletter

DAIRY

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Profit Monitor revision

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Dairy Knowledge Transfer

A major revision of the Profit Monitor has been completed to reflect a changing industry. Among some of the changes to the programme are:

- Increased detail on farm expenses:
  - veterinary costs can be divided into vet meds and vaccines;
  - milk replacer and young stock concentrates;
  - contract-rearing charges can be detailed separately; and,
  - build-up fertiliser costs and lime can be reported separately to maintenance fertiliser.
- More analysis of the drivers of farm profit:
  - a combined dairy and replacement enterprise report;
  - a grass utilisation estimate; and,
  - a detailed analysis of both paid and family labour.
- Scenario analysis – forward projections to see the effect of changes to prices of inputs and outputs and volume sold on future profitability.

The updated Profit Monitor can help dairy farmers make informed decisions.

Profit Monitor is a first-class benchmarking tool that will help you make better farm business decisions. Speak to your advisor about getting your farm analysed on the new system.

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Planning fertiliser requirements for 2022

Fertiliser prices have increased dramatically.

Slurry is a good source of N, P and K.

Get your soil tested to reveal valuable information.

Indications are that fertiliser prices will remain at all-time highs for 2022. Compared to 12 months ago, nitrogen (N) has almost tripled in price, while phosphorus (P) and potassium (K) have nearly doubled. Now is the time to plan your fertiliser requirements for 2022 to reduce the impact of high fertiliser costs. Get prepared now and complete the following steps in the coming weeks.

1. **Soil analysis** – soil test every field to establish current soil fertility levels. This provides very cost effective (€1.25/ha) information for tailoring P and K applications across the farm in 2022. The Teagasc soils database shows that 25% of soil samples from dairy farms are at Index 4 (very high soil fertility) for P and K levels, indicating that substantial savings can be made. Fields at optimum P and K Index 3 will utilise applied N most efficiently at 65%, compared to just 35% N efficiency for P and K Index 1 and 2 fields. Target appropriate rates of N towards soils with optimum fertility levels in the early part of the season (first and second rounds) to maximise its efficiency to grow grass.
2. **Soil pH and lime** – liming acidic soils to increase the soil pH to between 6.3 and 6.8 will increase soil N release by up to 70kg/ha/year. This will reduce the overall farm fertiliser N requirements and reduce fertiliser N costs by up to €155/ha. Correcting the soil pH will increase the availability of soil P and the utilisation of P, as either cattle slurry or chemical P fertiliser. A recent study completed at Johnstown Castle demonstrates how critical lime application can be for increasing soil P availability (see **Figure 1**).
3. **Test cattle slurry** – because it is a valuable source of N, P and K, cattle slurry should be applied to fields with the largest nutrient demand, for example, fields planned for grass silage production. Have your slurry tested to determine its N, P and K values and adjust

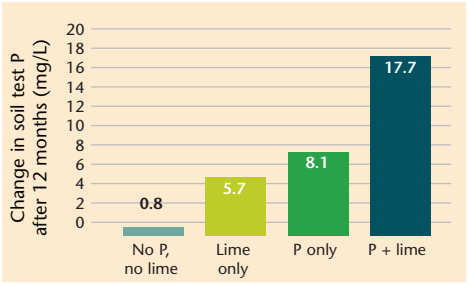

FIGURE 1: Average change in soil test P (Morgan's P test) across 16 mineral soils treated with P (100kg/ha), lime (5t/ha), or both P and lime and re-tested after 12 months.

Table 1: Available N, P and K values of cattle slurry at different DM percentages in spring by LESS application.

Dry matter (%)	Units/1,000 gals		
	N kg/m^3	P kg/m^3	K kg/m^3
2	0.4 (4)	0.21 (2)	1.4 (13)
4	0.7 (6)	0.35 (3)	2.1 (21)
6	1.0 (9)	0.5 (5)	3.5 (32)
7	1.1 (10)	0.6 (6)	4.0 (36)

Note – on Index 1 and 2 soils reduce slurry P availability by 50% and reduce K availability by 10%.

application rates to supply crop nutrient requirements. By targeting slurry appropriately, you can offset some of the requirement for expensive chemical fertiliser on your farm. **Table 1** shows the effect of slurry dry matter on N, P and K levels.

4. **Complete a farm fertiliser plan** – contact your local advisor now to update your farm fertiliser plan to put in place a strategy for lime, cattle slurry and fertiliser requirements for 2022.

RESEARCH UPDATE

METH-ABATE

EMILY ROSKAM and SINÉAD WATERS of Teagasc Grange explain how the Teagasc research project METH-ABATE examined the development and validation of novel technologies to reduce methane emissions from pasture-based Irish agricultural systems.

Ireland is committed to a legally binding target of net-zero emissions no later than 2050, and a cut of 21-30% in agricultural greenhouse gases (GHGs) by 2030 (compared to 2018 levels) under the Climate Action and Low Carbon Development (Amendment) Act 2021. Nationally, agriculture is the single largest contributor (~35%) to overall GHG emissions, driven by an increase in enteric methane from ruminants, which is produced in the rumen of cattle and sheep during the fermentation of feed as part of the digestive process. The METH-ABATE project aims to develop novel, farm-ready technologies to reduce methane emissions from ruminant fermentation. A number of promising feed additives, including seaweeds, plant extracts, halides and oils have been assessed *in vitro*, in a rumen simulation technique system. The most promising, anti-methanogenic additives from this work will be further examined in sheep, beef, and dairy trials, where their methane-reducing capacity will be measured while simultaneously monitoring their effects on animal productivity and ensuring there are no residues in meat or milk products. A sheep trial was conducted in Teagasc Athenry in 2021 and beef and dairy trials are planned to begin in 2022 in Teagasc Grange and Moorepark. Following the validation of a methane-reducing additive in the animal trials, slow-release technologies (i.e., encapsulated pellets/bolus form) will be developed to allow pasture-based delivery to conform to the Irish pastoral system. Finally, to ensure commercial adoption of these technologies, farm-level cost effectiveness of these anti-methanogenic technologies will be evaluated through the National Farm Survey.

Breeding targets for winter milk herds

Breeding goals for winter milk herds should be centred on improving milk solids output, while also improving fertility traits such as calving interval and six-week calving rate. Feed efficiency, health and longevity are also important goals. The Economic Breeding Index (EBI) balances these objectives.

The key breeding plan steps are:

- using your herd records, identify the lower-performing cows in the herd – either mark them for culling or breed them to high Dairy-Beef Index (DBI) beef bulls – do not breed your replacements from the following cows: those with low milk solids, poor temperament, poor fertility, high somatic cell count (SCC), lameness, etc.;
- select a panel (seven/eight) of high EBI (>€280) bulls from the active bull list – your bull team should be balanced for both the milk (>€100) and fertility (>€100) sub-indexes;
- target a high combined kg of milk solids (>30kg) in the team of bulls – aim to hold the milk volume proof at 80-160kg with high fat (>0.20) and protein (>0.15) potential;
- a cow with a maintenance sub-index of €8 will weigh approximately 600kg as a third calver in mid lactation;
- the bull team should vary around these average figures to complement the variation in the cow herd;
- select two to three bulls with low calving ease proofs within the team for use on your replacement heifers; and,
- use the 'Sire Advice' tool on HerdPlus to develop your team of bulls, create a mating plan and avoid any inbreeding.

Table 2: Example: Johnstown Castle Winter Milk Herd – Bull Team.

		EBI sub-index							PTAs							
	EBI	Milk	Fert.	Calv.	Beef	Maint.	Mngt	Hlth	M	F	P	F+P	F	P	CI	Su
	€	€	€	€	€	€	€	€	kg	kg	kg	kg	%	%	days	%
All cows in herd	180	65	76	35	-8	6	3	3	123	10.6	9.2	19.8	0.10	0.09	-3.8	2.3
Predicted 2022 calves	245	93	99	42	-8	7	5	6	142	15.9	12.4	28.3	0.18	0.13	-5.3	2.6
Bulls' weighted averages	310	121	123	50	-8	8	6	9	161	21.2	15.5	36.8	0.25	0.17	-6.8	3.0

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