Knowledge grows

# Yara Ireland

Tried, Tested and fully Traceable

Republic of Ireland

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# About Yara Ireland

*Without mineral fertiliser the world could only feed 40% of its population.*

*In 1905 Samuel Eyde and Kristen Birkeland created a 15.5% nitrogen mineral fertiliser to prevent famine in Europe. Nearly 120 years on, fertiliser has continued to feed an ever-growing global population.*

*Feeding the world is a challenge. Feeding the world sustainably is an even greater challenge. This is, however, Yara's top priority.*

*Reducing emissions while increasing food production needs strong navigation with an accurate compass. During challenging times, different initiatives are explored by organisations and companies to trial the "next best thing". Yara are investing heavily in reducing the carbon footprint of our fertilisers but without any impact on the quality of our fertiliser.*

*Quality is the foundation rock that the Yara brand is built on and so it will not be compromised. This is why millions of dollars is being invested at the production sites where on hand expertise is being utilised to decrease the carbon footprint of our fertiliser at source. For example, Yara has decreased its emissions by 50-60% at production sites in comparison to factories manufacturing outside of Europe but who still import fertiliser into the UK and Europe. This reduction has been possible due to the installation of catalytic abatement technology. Our product has not been negatively impacted.*

*Unfortunately, proposed legislation does not take this into account. In many cases fertiliser is being imported to the EU with a higher footprint and then inhibitors are applied in the case of urea to reduce their infield emissions. This is a concern in that urea products especially urea blended products which are now being championed by some organisations tend to have a more variable spreading pattern leading to inconsistency in the field and striping in some cases. This leads to a reduction in yield and ultimately food production.*

*Yara's Complex Compound Fertiliser is tried, trusted and fully traceable to our own factories which have been fitted with catalytic abatement technology. The sourcing of raw materials, production, shipping, bagging and transport of fertiliser is all carefully monitored to ensure Yara's fertiliser arrives to distributors and farmers with the same quality as it left our factories. Navigating a reduction in emissions whilst ensuring food security for all is a complex balancing act. Be assured that Yara will do all it can to achieve both while also keeping to its quality promise "What's on the bag is in the bag".*

**Eva Ross**
Head of Commercial Partnerships

# Understanding CCF

Yara is Ireland's only manufacturer of CCF Fertilisers

## What is a CCF?

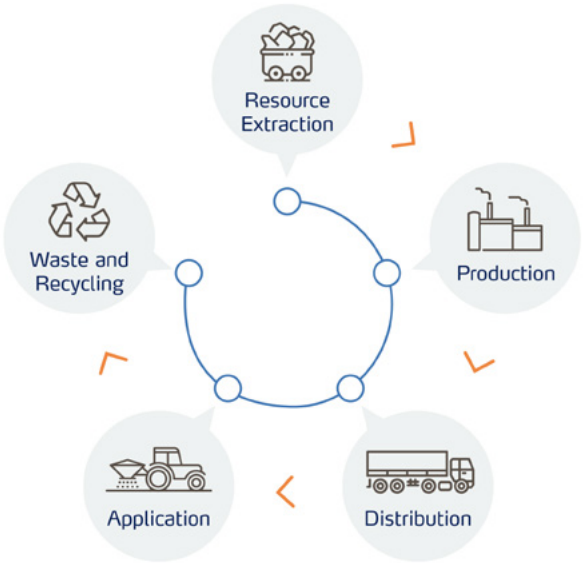
A Complex Compound Fertiliser is one that has been manufactured in plants, which have the capability of mixing all the nutrients together before the final granulation or prilling process. This means all the granules or prills in that fertiliser product, have the same nutrient analysis, density, shape and size range.

### Why use a compound fertiliser?

- Every particle contains all the nutrients. YaraMila compound fertilisers include each nutrient (nitrogen, phosphorus, potassium and sulphur) in the correct proportions in every particle which simply guarantees the correct nutrient analysis.
- Even application and uptake of nutrients, offering improved uptake, efficiency and ultimately - growth response. Because all the particles in a YaraMila compound fertiliser are the same size and bulk density they spread uniformly, offering an even application of nutrients, with more accurate and consistent results in the field.
- No segregation of nutrients. There is simply no segregation of nutrients during transport, handling or application. Because all the granules have consistent particle size and bulk density no segregation is possible, and crops receive a balanced supply of even nutrients across your spreading bout.

### What are the benefits of using Yara fertilisers?

- **More landing sites** - YaraMila CCF gives around 10 x the number of landing sites compared to blended fertiliser products.
- **Improved return on investment** – With the improved efficiency of CCF fertiliser, naturally you can grow more with less.
- **Consistent spreading** - YaraMila fertiliser quality means it spreads further and more consistent, allowing for even application of nutrients across your bout width.

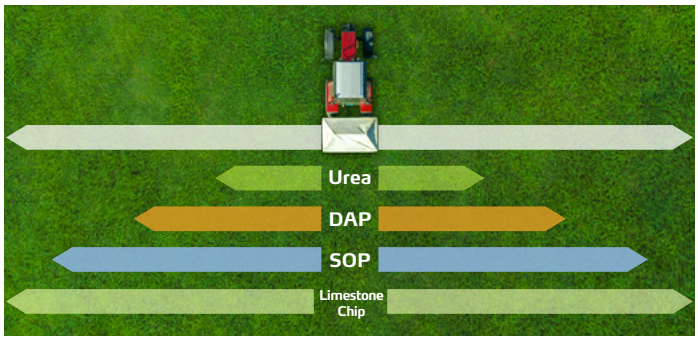



### Yara Traceability and Quality Guarantee

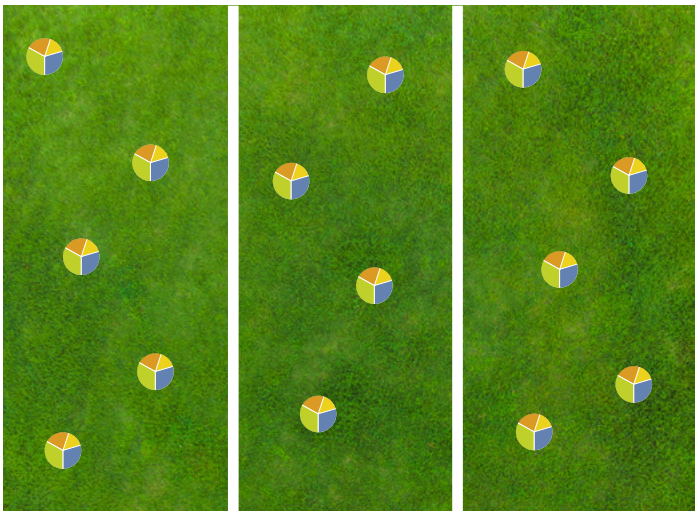
Whenever you see YaraMila you can be certain that the fertiliser has been made in one of our own factories. This means we know exactly what is going into each bag of fertiliser so we can trace each bag of YaraMila back to the ingredients used to make it.

## Yara CCF Spreading Width

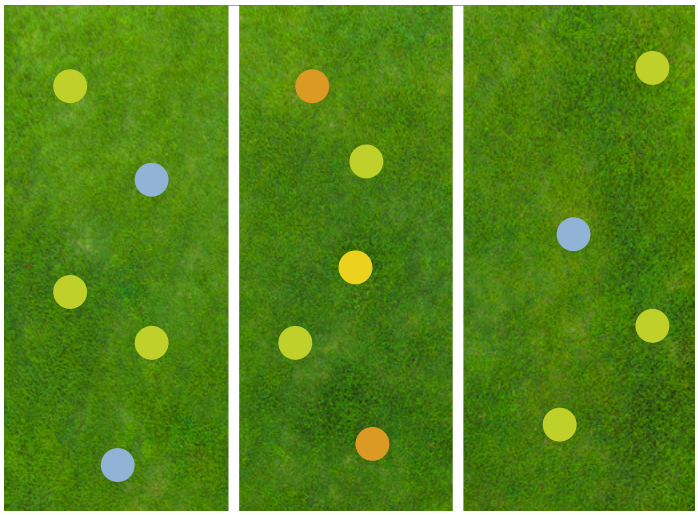

## Blended Fertiliser Spreading Width




**YaraMila**
(complex compound)

**Other**
(blend)

## Yara CCF product

## Blended NPKS product

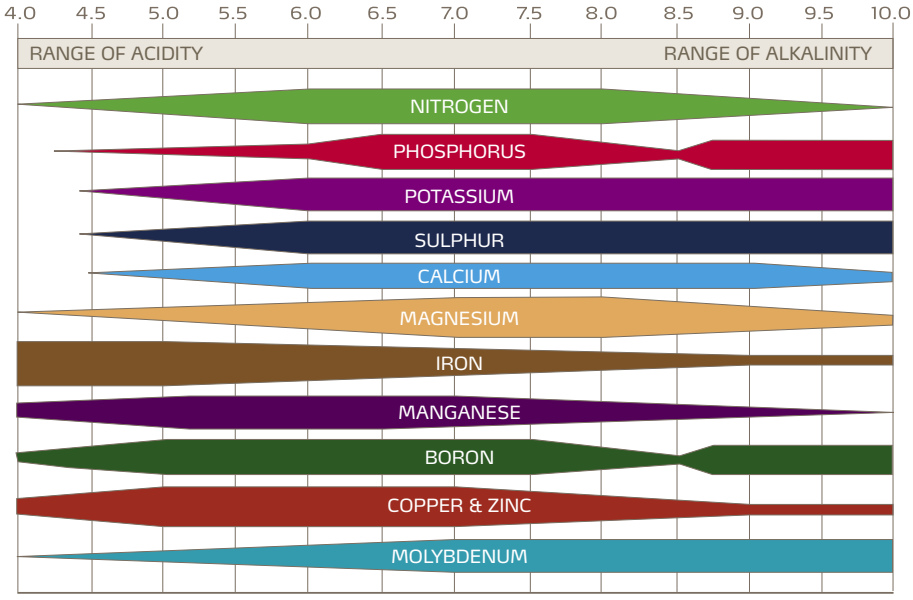
# Grassland Facts

## Improve grass quality and yield with Yara

Grass is the cheapest form of livestock feed available, therefore maximising your field's potential will have a significant impact on your overall livestock performance. To grow quality grass and produce quality livestock means choosing a quality fertiliser. Yara have invested heavily into research for the grassland sector to highlight best practice and improve Nutrient Use Efficiency (NUE), offering CCF products proven to boost grass and animal performance, while also reducing the carbon footprint of our fertilisers and environmental impact throughout the supply chain.

### Sustainable Soil, Grass and Livestock

Offering a sustainable portfolio of products to grassland farmers has been our priority in recent years. With an emphasis on soil health, the diagram below demonstrates the influence on nutrient availability, measured against soil pH. A top tip to ensure optimum availability and nutrient uptake, is to maintain an optimum soil pH, with regular soil analysis.




Choosing the correct fertiliser each year should be based on stocking density and soil analysis results.

Whether grazing or growing silage, Yara have an extensive portfolio of products available to suit your soil conditions and expectations.

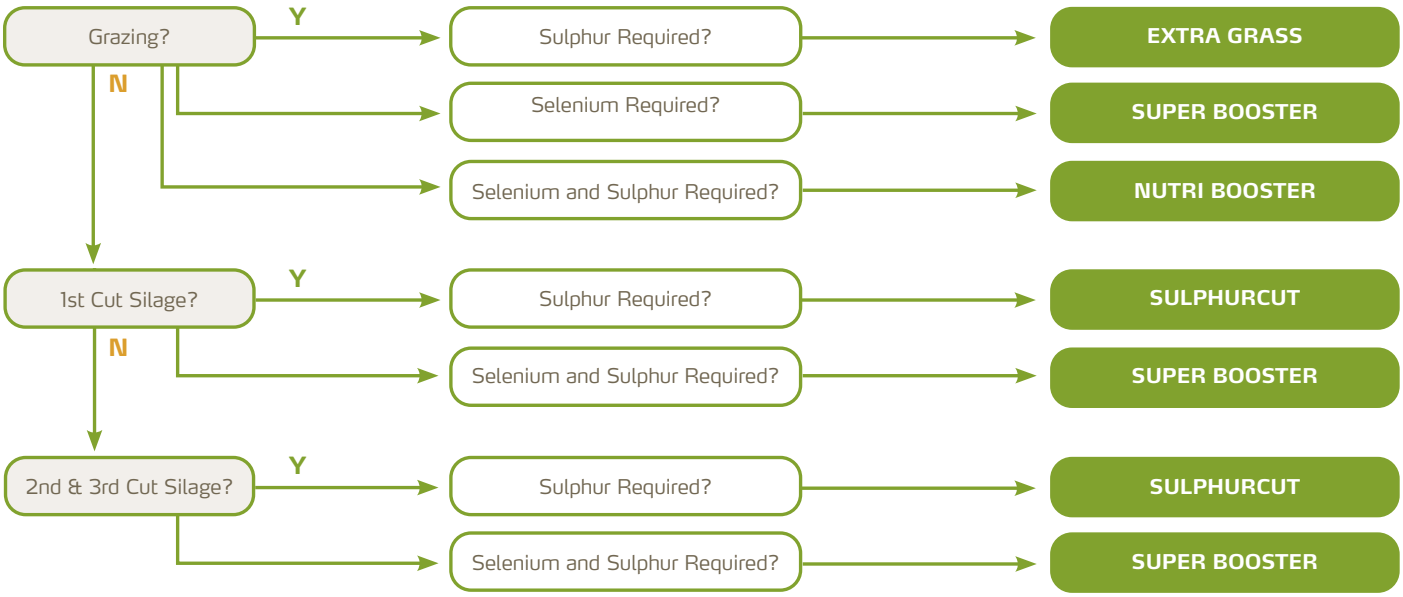
The Grassland Fertiliser Decision Tree gives guidance on situations where Sulphur or Selenium may be required for improved nitrogen response or animal performance.

### The YaraMila grassland range of true uniform NPKS compound fertilisers

They will help you achieve an even spread pattern and can be bought with the confidence that:
**"What is on the bag, is in the bag!"**

- Order now to allow time for delivery and ensure you're ready to go.
- Apply the **Right** grade at the **Right** time at the **Right** rate.
- Follow the 3 R's and you will be on the road to success!

## Grassland Fertiliser Programmes Decision Tree




# Fertiliser Timing and Rates this Spring

**Only apply Nitrogen fertiliser when soil temperatures are 5°C or above, when there is a good short and medium term weather forecast and only when field conditions allow.**

**by Philip Cosgrave**

Agronomist - Grassland Specialist

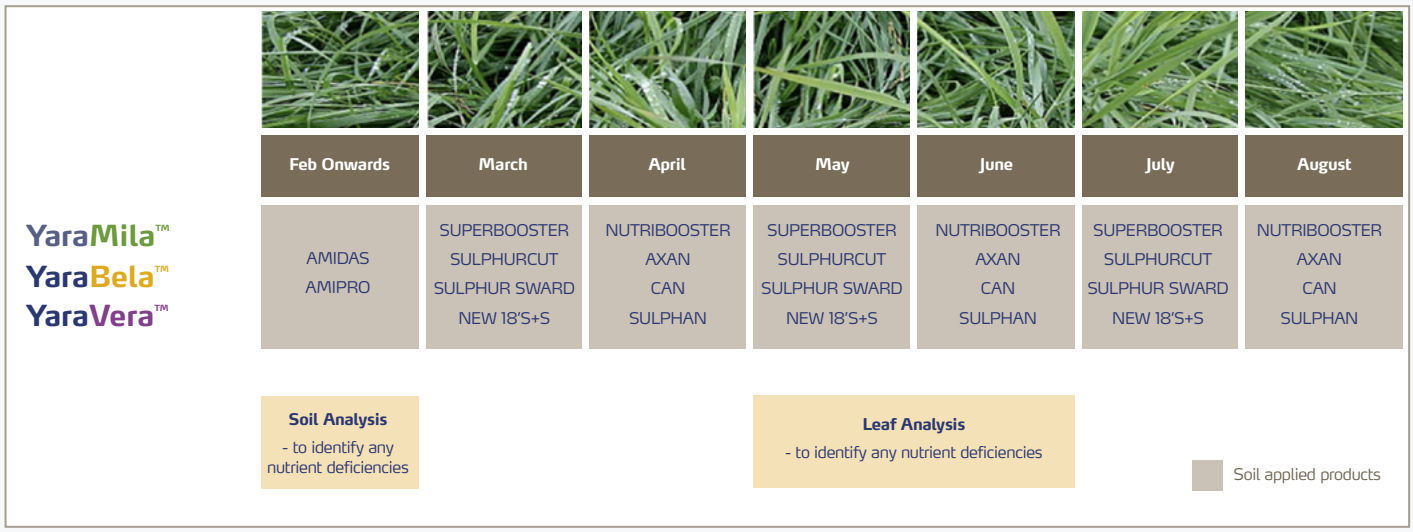
### Silage

- Slurry application in February if weather and field conditions allow at a rate of 22 – 33 m³/ha (2,000 – 3,000 gallons/acre) to kick start growth.
- Spring slurry applications retain more of the nitrogen content of the slurry compared to autumn and winter applications.
- Fertiliser can then follow mid-March assuming a mowing date in early mid-May.

### Grazing

- Depending on your target turn out date, applications little and often from late February are appropriate.
- Spring nitrogen applications do not impact clover performance.

## Grazing Fertiliser Timeline



# Tillage Sector

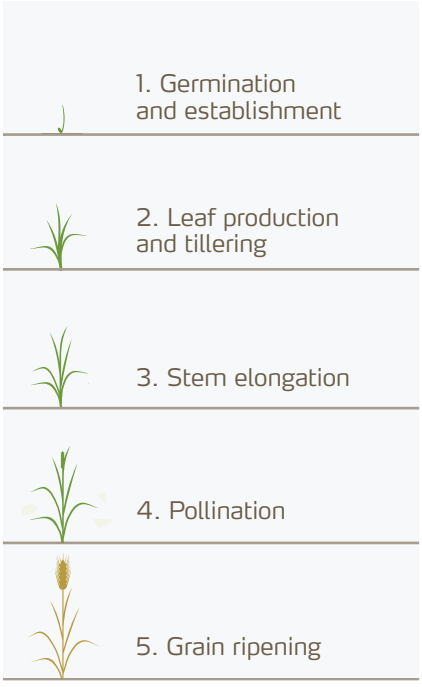
## Optimize yields with Yara Complete Crop Nutrition

Yara offers Ireland's tillage sector a range of solutions, including complex compound fertilisers, agronomy, foliar nutrition products and digital tools, designed to elevate your crops performance for optimum yields and superior quality. Our commitment to crop research, product development and infrastructure demonstrates our ambition to support farmers in producing profitable and sustainable crops around the world, in working towards a nature positive food future.

### Barley Growth Stages

Barley would be considered the most dominant arable crop in Ireland, with malting and feed markets demanding home-grown grain. During the first 60 days of the crop's life many of the components for maximum yield will be set, with leaves, tillers, and grain sites all established.

Physiological Development barley goes through the following distinct phases:




### Complete Crop Nutrition

The growth and development of the spring barley follows the same pattern as winter varieties but concentrated in a much narrower growth window. With the short season, establishment is critical to achieve a large Green Area Index (GAI) as soon as possible to capture the light through May, June and July. Proactively managing crops with nutrition prevents yield loss from "hidden hunger" - think more about ensuring nutrient 'Sufficiency' rather than treating nutrient 'Deficiency'.

Yara, along with independent trials, have shown that for winter cereals, the critical application timing for yield attainment is between GS30 and GS32. The nitrogen can be applied in two or three splits depending on crop canopy size and soil type. Lighter soils are more prone to leaching thus three applications reduce the risk of losses. These same soils tend to be less able to hold nutrient, thus earlier applications are beneficial to prevent plant tiller loss in early spring. The key is to satisfy the crops requirement as it grows through the spring and early summer.

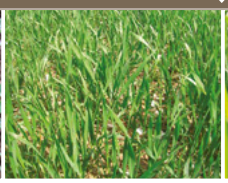
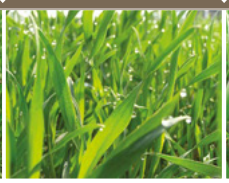
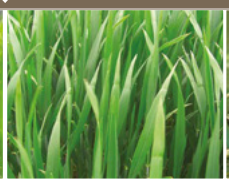
**Sulphur** is required by the plant in a sulphate form, and not as elemental sulphur, throughout March, April and May. Sulphate, like nitrate, is leachable and care must be taken in the timing of application. Multiple applications with nitrogen reduce the risk of sulphur leaching from the soil and helps to alleviate any risk of inadequate supplies of sulphate being available during the main growth phases (mid-April-early June). It is for this reason that Yara recommends applying 'little and often' at the nitrogen timings.

**Phosphorus** is required due to its role in root development in the growth cycle and the plant's ability to extract nutrients from the soil. Due to the very low mobility of phosphate in the soil, a lot of the nutrient in the soil will be unavailable to the plants whilst the rooting system is small.

**Potash** in spring, as cereals reach tillering and crops begin to grow rapidly the uptake requirements of several nutrients increases dramatically, especially potash. The demand for potash may be more than 10kg/ha/day, with a total requirement of up to 200kgs K by the end of flowering.

**Manganese** deficiency is the most common trace element deficiency found in cereals, which can encourage the development of Powdery Mildew. An application at GS 25 and repeated at GS 30 is required for the treatment of manganese deficiency and is especially important in mildew susceptible varieties.

## Winter Barley

| | Soil Analysis ↓ | | Tissue Analysis ↓ | Tissue Analysis ↓ | Grain Analysis ↘ |
|---|---|---|---|---|---|
| |  |  |  |  |  |
| | Growth Stage <25 | Growth Stage 30 | Growth Stage 31-32 | Growth Stage 37-39 | Growth Stage 49-59 |
| YaraMila® | NPKS Compound 350 kg/ha** | | | | |
| YaraBela® | | AXAN* 500 kg/ha** | | | |
| YaraVita® | MANTRAC PRO 1 l/ha | BORTRAC 1 l/ha | | | |
| YaraVita® | CROP BOOST 3 l/ha | GRAMITREL 1-2 l/ha | GRAMITREL 1-2 l/ha | MAGPHOS K 3 l/ha | |

* Alternative N+S or NPK+S grades are available as required
** Rate depending on SNS and N-Plan recommendation

Read label before application of any YaraVita product

Soil applied products | Foliar applied products

**Micronutrients** should not be overlooked in any crop programme as although they are not required in such large quantities as the major and secondary nutrients, they are vital to optimising the crops performance and therefore yield.

# Potato Focus

## Efficient Potato Nutrition

Management of potato nutrition doesn't have to be complicated and is an easy way to improve the profitability of the potato crop. Just like any other crop, potatoes need balanced nutrition and if any nutrient is limiting or unavailable to the plant, growth will be slowed, causing a reduction in yield or quality as a result. Making sure your potatoes are fully supplied with all the nutrients they require is the best way to improve crop yield and ensure good tuber quality.

### Soil Management

Potatoes are grown on a range of soils varying from light sands to clay loams, all with different water holding capacities.

An ideal potato soil is well structured, with good drainage to allow proper root aeration and tuber development with minimal root disease infestation.

Potatoes prefer soils with a pH of 5.5 to 7.0 and low salinity. The starting point for identifying any limitations is broad spectrum soil analysis. This can help to show the levels of each nutrient that are held in the soil and offer a starting point for developing your nutrition program for the soil type and variety grown.

### Increasing Tuber Size and Uniformity with YaraVita.

Tuber size and uniformity is critical for every market, whether it is fresh potatoes, seed or processing crops. Anything that the grower can do to prolong a healthy leaf canopy will increase the average tuber size. Foliar phosphate, applied after tuber initiation, increases tuber size and so increases tuber yields. However, foliar phosphate is not a substitute for soil applied phosphate and without adequate soil phosphorus early season growth is sub-optimal.

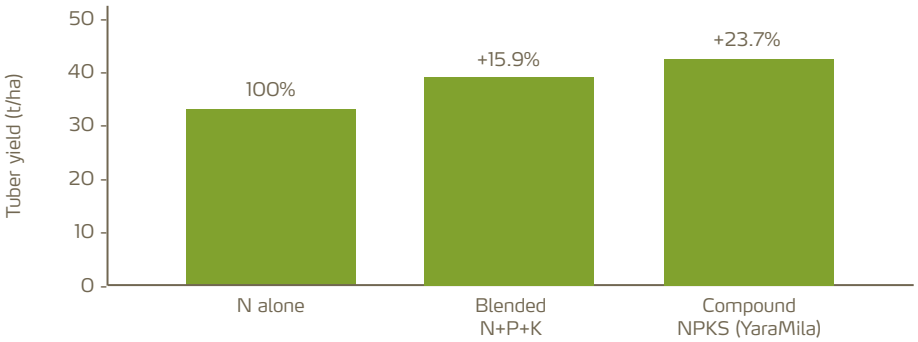
### Guidelines for Potato Nutrition

Potatoes produce a fibrous root system that is at best no more than 60cm long. As a result, potatoes are often unable to exploit nutrients and soil moisture at depth within a soil profile.

Nutrition is also important for plant health, improving resistance or tolerance to disease. Shortages in any nutrient (particularly potassium, calcium, boron, manganese, copper or zinc) could lead to an increase in disease levels, which if not controlled effectively through fungicides can also decrease the yield response from Nitrogen.

Since 1989, the Yara Research Centre at Hanninghof has been running a long-term trial with a cereal-potato crop rotation. Results from nine potato harvests show the highest yield response with a YaraMila grade in all years (figure).

Average yield of potatoes (n = 9 years)




**YaraVita™ MAGPHOS K**

To increase tuber size a minimum of 2 applications of 5 l/ha during tuber bulking (as soon as first formed tubers are 10 mm in diameter). Allow 10-14 days between applications. Water rate: 200 l/ha.


## Maincrop Potatoes

| |  Pre-Planting |  Planting |  Vegetative Growth |  Tuber Initiation |  Early Tuber Bulking |  Maturity |
|---|---|---|---|---|---|---|
| YaraMila™ | | Maincrop* 750 - 1000 kg/ha | | | | |
| YaraLiva™ | | | | Tropicote 375 - 500 kg/ha | | |
| YaraVita™ | | | MAGFLO 300 4 l/ha MANTRAC PRO 1 l/ha | Magphos K for tuber numbers 10l/ha | Magphos K for tuber size 2 x 5 l/ha | CROPLIFT PRO 5 kg/ha ** |
| Analytical Tools | Broad Spec Soil Analysis - to identify limiting nutrients | | Petiole and Tissue Analysis - to identify limiting nutrients 4 l/ha | N-Sensor - to variably apply nitrogen and increase N use efficiency (if applying a top dressing) | | N-Sensor - for desiccation N-Tester - to monitor N status of canopy |

*Read label before application of and YaraVita product* **Alternatice products are available, depending on P&K requirements*

Soil applied products | Foliar applied products | Analytical tools

## Seed Potatoes

| |  Pre-Planting |  Planting |  Vegetative Growth |  Tuber Initiation |  Early Tuber Bulking |  Maturity |
|---|---|---|---|---|---|---|
| YaraMila™ | | Maincrop* 525 - 650 kg/ha | | | | |
| YaraLiva™ | | | | Tropicote 200 - 500 kg/ha | | |
| YaraVita™ | | | MAGFLO 300 4 l/ha MANTRAC PRO 1 l/ha | Magphos K for tuber numbers 10l/ha | Magphos K for tuber size 2 x 5 l/ha | |
| Analytical Tools | Broad Spec Soil Analysis - to identify limiting nutrients | | Petiole and Tissue Analysis - to identify limiting nutrients | N-Sensor - to variably apply nitrogen and increase N use efficiency (if applying a top dressing) | | N-Sensor - for desiccation |

*Read label before application of and YaraVita product* **Alternatice products are available, depending on P&K requirements*

Soil applied products | Foliar applied products | Analytical tools

# Yara Solid Fertilisers

Yara offers the best performing and most reliable solid fertiliser in Ireland. If you are using solid fertiliser, we can provide you with our range top quality Nitrogen Sulphur grades, to true uniform NPKS compounds to fulfil your nutrient needs.

## YaraBela

### Nitrogen + Sulphur Fertiliser

Nitrate-based fertilisers are the most efficient form of nitrogen


Nitrate-based compound fertilisers are the most efficient form of nitrogen. With added sulphur, nitrogen uptake and efficiency is improved to offer additional yield and quality across all crops

**Stronger**

**YaraBela** granules are stronger so will not shatter when spread

**Even**

**YaraBela** fertilisers are easily spread to 36m and beyond

**Heavier**

**YaraBela** granules are heavier so perform better even in windier conditions

All YaraBela fertilisers are granular compounds offering the best quality and spreadability. Remember if the bag says Yara, you can be assured of the fertiliser quality within the bag.

## Why choose YaraBela nitrate-based fertiliser?

### Agronomic efficiency

- **Immediately available nitrogen** - Nitrogen present as nitrate and ammonium, immediately available for plant uptake.
- **Highly soluble sulphur** - When included sulphur is present as calcium sulphate which is highly soluble so reaches plant roots quickly.
- **Higher yield than urea** - At identical nitrogen application rates, nitrates offers 2 – 5% higher yield than urea based fertilisers.
- **Enhanced protein** - Nitrate fertilisers enhance protein content by 0.3 – 0.9% compared to urea-based fertilisers.

### Environmental benefits

- **Low volatilisation losses** - Volatilisation losses from ammonium nitrate fertilisers are 1 – 3%, compared with up to 27% from urea.
- **Reduced leaching** - High nitrogen efficiency, fast uptake and lower dosage giving better control over residual nitrogen.
- **Low carbon footprint** - The life cycle carbon footprint of YaraBela nitrate fertilisers is 12.5 % lower than for urea based fertilisers.
- **Low environmental index** - The overall environmental index of YaraBela is 46.6 % lower than for urea fertilisers.

*See our full range of YaraBela fertilisers or contact your local merchant for more information*

# Yara Solid Fertilisers


## YaraMila
## Compound NPKS Fertilisers

A range of true CCF fertilisers containing Nitrogen, Phosphorus, Potassium and in most cases Sulphur. Each granule or prill contains all elements, ensuring even and accurate distribution

If you are looking to provide NPKS nutrition to your crops, our range of true uniform compound NPKS fertilisers contain nitrogen, phosphorus, potassium and sulphur in each granule or prill, assuring accurate and even distribution.

Our YaraMila range provide the most essential plant nutrients – designed to meet specific crop requirements to maximize crop yield and quality.

When you apply nutrients using a true compound fertiliser you avoid the risk of segregation and uneven distribution that a blended fertiliser may produce. With YaraMila you also have the reassurance of a fully traceable fertiliser, manufactured sustainably and ethically.

## Why choose YaraMila compound fertiliser?

### Flexible nutrient combinations

- **No nutrient segregation** - All nutrients are contained in every prill or granule so there can be no risk of nutrient segregation during shipping, handling or spreading.
- **Even nutrient application** - All nutrients are applied evenly to the whole crop avoiding uneven application and yield losses.
- **Range of nutrient ratios** - A wide range of N:P:K + S ratios and availability of formulas with secondary and micronutrients ensure there are YaraMila fertilisers for all crop situations.
- **Sulphur included** - Almost all formulations now include sulphur ensuring balanced fertilisation without the need for an additional sulphur fertiliser.
- **Additional nutrients** – Many YaraMila fertilisers also contain micronutrients essential for specific crops. These may include boron, iron, manganese, molybdenum, zinc and/or selenium.

### Efficient nutrient sources

- **Balanced nitrogen source** - Nitrogen is present at 40-45% as nitrate-N and 55-60% as ammonium-N, depending on the production process and the specific formula.
- **Fast nitrogen uptake** - High nitrate-N content ensures a quick response to nitrogen, while the ammonium-N is important to keep a sustained delivery of nitrogen.
- **Available phosphorus** - Phosphorus is fully plant available, as water soluble ortho- and polyphosphates and ammonium citrate soluble di-calcium phosphate. The combination of different forms gives greater and a longer lasting availability of phosphorus to crops.
- **Alternative potassium sources** - Potassium is included as MOP (Muriate of Potash - potassium chloride) or SOP (Sulphate of Potash -potassium sulphate). Products based on SOP are specially for crops with low chloride tolerance whilst MOP based products are suitable for all other crops.

*See our full range of YaraMila fertilisers available in Ireland by scanning the QR code or contact your local merchant for more information.*


# YaraVera

## Urea-based Fertilisers

Cost effective sources of nitrogen and sulphur

YaraVera AMIDAS is a highly concentrated source of nitrogen and sulphur. This high quality compound is a cost effective option for use on all crops.

Within this range we have products that have an added inhibitor, which is designed to deliver a more efficient use of nitrogen. For example, our YaraVera AMIPRO contains NBPT, a urease inhibitor, which delays urea degradation and keeps nitrogen in the soil for longer, avoiding the volatilisation losses seen in straight urea products. Trials have shown the inhibitor to reduce these losses to as low as 5%.

### YaraVera AMIDAS
40%N + 5.6%S

A sulphur enriched granular compound urea-based fertiliser delivering higher yield results than urea alone for use on arable crops and grassland.

YaraVera AMIDAS is formulated to supply Nitrogen and Sulphur to a wide range of arable crops and grassland.

It's 7:1 N to S ratio combines urea with sulphur to increase Nitrogen Use Efficiency.

## Protected Urea

### YaraVera AMIPRO
40%N + 5.6%S + NBPT

Is our stabilised sulphur enriched granular urea-based fertiliser delivering higher yields and significantly lower ammonia emissions compared to straight urea when applied on crops or grassland.

We've coated YaraVera AMIPRO with a proven urease inhibitor called NBPT which is effective in lowering ammonia volatilisation by 70 - 78.5%* relative to straight urea.

### YaraVera AMIPLUS
46%N + NBPT

A urea fertiliser with inhibitor to decrease nitrogen losses, increasing urea effectiveness.

YaraVera AMIPLUS contains NBPT, an urease inhibitor, which delays urea degradation and keeps nitrogen in the soil for longer, avoiding the volatilisation losses seen in straight urea products.

*Discover more about our range of urea and protected urea fertilisers available in Ireland.*

# Yara Foliar Nutrition

## YaraVita
## Foliar Nutrition

For superior field performance


YaraVita is our range of foliar applied nutrient formulations, sprayed directly onto crops with a conventional sprayer and nozzles, to offer a variety of micro and macro nutrients to your crop.

Foliar Fertilisers offer the unique ability to supply your crop with exact nutrients, at the right time to ensure optimum yields and quality.'

## Manufactured by Yara

### Enhance crop performance

Each YaraVita foliar product is formulated from consistently high-quality nutrient compounds. YaraVita foliar nutrients are a necessity to guarantee the highest crop quality and yield.

### Manufactured in the UK

Yara Pocklington site is the global centre for the development and production of the YaraVita range of foliar and micronutrient fertilisers.

### Better Return on Investment

YaraVita products are designed and formulated for maximum efficiency and performance. Products can be applied and nutrients taken up by the crop exactly when they are required.

*See our full range of YaraVita foliar products or contact your Yara Crop Nutrition Account Manager today.*

# Yara Foliar Nutrition & Biostimulants


## YaraAmplix
## Biostimulants

Help crops overcome abiotic stresses

YaraAmplix is our latest portfolio, launched in 2024 to represent our range of innovative biostimulant products, to support plant growth in overcoming abiotic stress.

## Why choose YaraAmplix?

**Reduce the impact of climate change**

Adapting practices to changing climate conditions, it enhances tolerance to abiotic stress, resulting in improved yields.

**Optimise the use of resources**

Increases nutrient use efficiency, reducing nutrient losses to the environment and optimizing fertiliser use efficiency.

**Improve soil health**

Improves soil health and fertility, positively impacting soil restoration and water use efficiency.

**Improve biodiversity**

Improves biological diversity in the soil by creating favourable conditions for microorganisms, improving microbial activity.

**Farmer prosperity**

Improves crop quality, contributing to more vigorous and healthy plants, leading to less food waste and improved yield quality & quantity.

YaraAmplix™ offers a diverse range of products which are also suitable for different application methods, including foliar, fertigation, seed and fertiliser coating.

### YaraAmplix OPTINUE

Promotes root growth and enhances rhizosphere efficiency to improve nutrient uptake.

### YaraAmplix OPTITRAC

Stimulates flowering and fruit set.

*Contact your Yara Crop Nutrition Account Manager or check the website for more information.*

# The Future with Yara

Yara is committed to a nature positive food future, with the vision to support a sustainable global agricultural industry in a growing population.

Over the years, we have developed a growing range of innovations to suit farming and food sectors, with the ambition to support a circular economy, reduce environmental impacts, reduce waste and improve supply chain efficiency. With this innovative approach, we continue to invest in R&D projects which will add value to farmers and the wider food chain, through collaborations, research and investment.


## YaraSuna

### Organic Based Fertilisers

Aids physical, chemical and biological soil health


YaraSuna is the global brand name for Yara's portfolio of recovered nutrients from organic compounds. Suna is inspired by the Norwegian word for healthy (ie. sunn). It can be connected to "Soil Health".

**Conventional application**

Can be applied via conventional fertiliser equipment.

**Improve soil health**

Measured improvements to soil microbial activity and carbon content.

**Recycling nutrients**

Promotes a circular economy by bringing recovered nutrients back onto farm.

**Crop performance**

Proven crop performance over multiple years of trials.

## Low Carbon Fertilisers

Low-carbon footprint fertilisers are essential for transforming the food value chain and reducing carbon emissions. Yara's premium fertilisers already have a low carbon footprint, but their production currently depends on fossil sources. However, this is about to change. Yara have introduced low-carbon footprint fertilisers that are produced using renewable electricity instead of fossil sources. These fertilisers will be predominantly manufactured using the resources from water and air, resulting in a 70-90% reduction in carbon footprint compared to the same fertilisers made with natural gas.

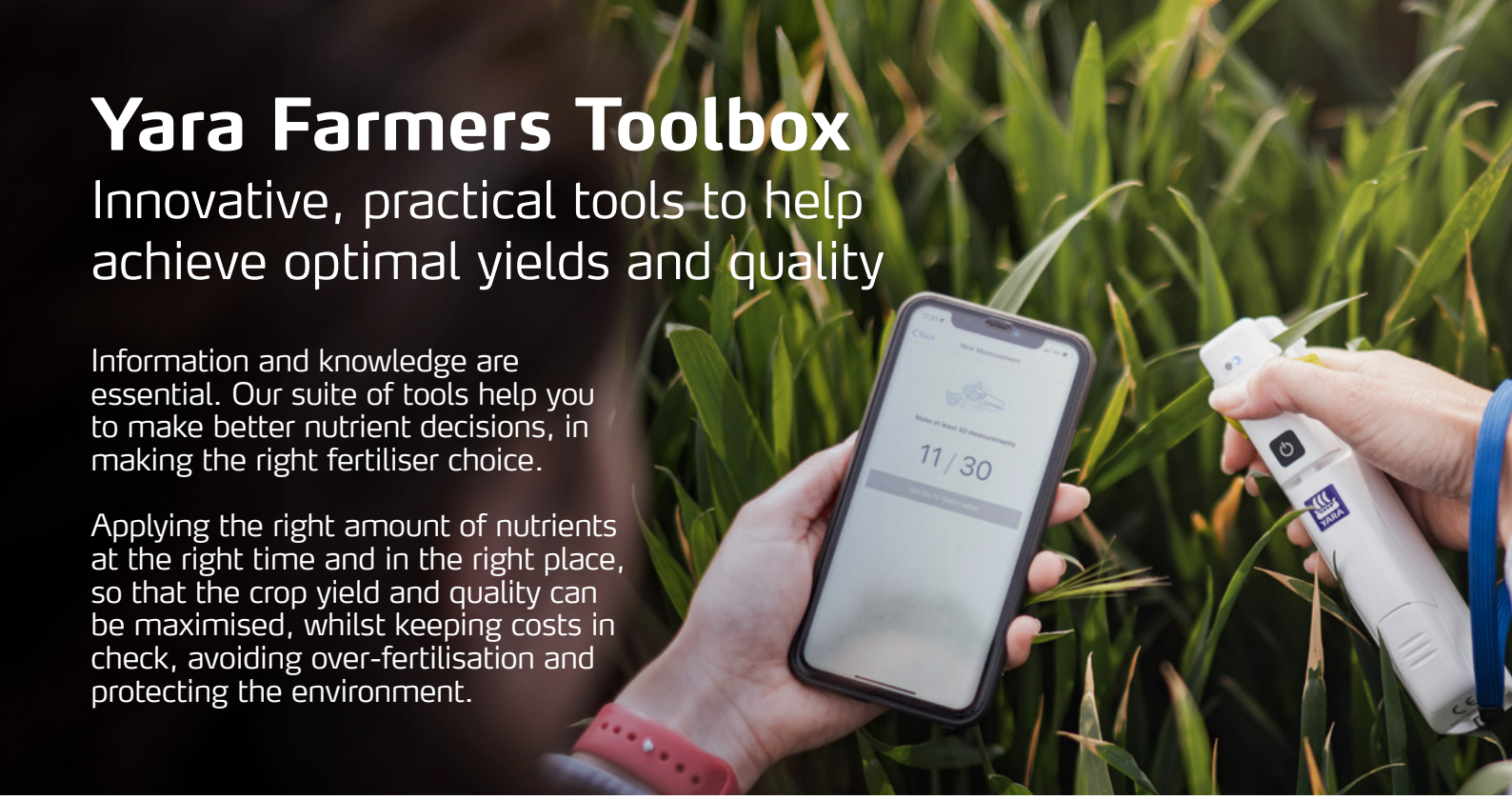
Yara has officially opened its renewable hydrogen plant at Herøya, Norway. The hydrogen is produced with electrolysis of water and renewable energy, replacing natural gas as feedstock and annually cutting 41,000 tonnes of $CO_2$ emissions from the site.

Yara has already delivered the first tonnes of fertilisers made from renewable ammonia produced at the plant. The low-carbon footprint fertilisers produced and delivered will be part of a new portfolio called Yara Climate Choice. In addition to fertilisers produced with electrolysis of water and renewable energy, fertilisers based on low-carbon ammonia produced using carbon capture storage (CCS) will be a large part of Yara's portfolio going forward.

Additionally, Yara provides crop nutrition solutions precision farming and digital tools to help farmers optimise yields, cultivate healthier crops, protect the soil and reduce their carbon footprint. Using Yara low carbon fertiliser along with the tools and services, we will provide both farmers and food companies consistency in optimising nutrient use efficiency and therefore low carbon crops into the future.

# Yara Farmers Toolbox

## Innovative, practical tools to help achieve optimal yields and quality




Information and knowledge are essential. Our suite of tools help you to make better nutrient decisions, in making the right fertiliser choice.

Applying the right amount of nutrients at the right time and in the right place, so that the crop yield and quality can be maximised, whilst keeping costs in check, avoiding over-fertilisation and protecting the environment.

### **Atfarm** precision nitrogen management made simple

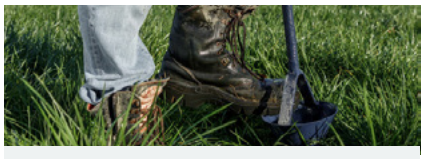
Atfarm is an online service to help farmers manage crop nitrogen by combining state of the art technology with Yara expertise.

### **N-Sensor** to variably apply nitrogen

The Yara N-Sensor is a variable rate sensor that measures crop nitrogen requirement at the time of application and variably adjusts the fertiliser rate accordingly.

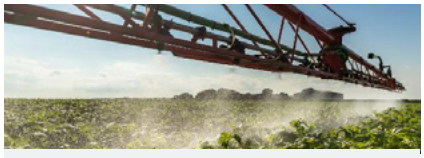
### **N-Tester BT** to measure leaf nitrogen

Yara N-Tester BT is a handheld leaf nitrogen measurement tool that enables quick and easy readings to be taken in a growing crop to establish its exact nitrogen status.



### **Soil testing and analysis** to identify limiting factors

Soil testing and analysis gives the background knowledge on the chemical, physical and biological status of a soil that we need in order to properly manage our soils and crops.



### **Tankmix** an easier way to check physical compatibilities

Yara Tankmix is an app and online service that checks for physical compatibilities or tank-mixability when using YaraVita foliar crop nutrition products with other crop protection products.

### **Fertiliser calculators** to compare costs

A useful collection of calculators to compare the return on investment and margin over fertiliser when using different fertilisers.

*Discover the range of innovations available in Ireland, including our fertilizer calculators designed to support farmers in choosing the most cost-effective and efficient fertilizer to suit the farm.*

# Product Range

The only Irish Fertiliser Supplier who manufacture Complex Compound Fertilizers

## YaraMila™


27-2.5-5


27-2.2-4.2 +2.4%S


27-1.76-3.3 +4%S


25-2.2-4.2 +2%S+Selenium


25-0-7+4%S


22-0-12+3%S


24-2.5-10

## YaraMila™


22-1.7-11.6+3%S


17.6-6-10.5 +2.5%S


20.6-3.6-9.6 +2.6%S

## YaraLiva™


15.5%N+19%Ca


15.5%N+18%Ca +0.3%B

## YaraBela™


27%N+3.6%S


27%N


25%N+2%S +Selenium


24%N+6%S

## YaraVita™


Foliar Nutrients for superior field performance

## YaraVera™


46%N + Urease inhibitor


46%N


40%N+5.6%S


40%N+5.6%S + Urease inhibitor


0-9-25+S


34%N


14-5.7-17 +2.25%S

## YaraAmplix™


Biostimulants
Help crops overcome abiotic stresses

Find a contact

Find a Distributor

# About Yara

Yara's mission is to responsibly feed the world and protect the planet. We pursue a strategy of sustainable value growth through reducing emissions from crop nutrition production and developing low-emission energy solutions. Yara's ambition is focused on growing a nature-positive food future that creates value for our customers, shareholders and society at large and delivers a more sustainable food value chain.

To drive the green shift in fertiliser production, shipping, and other energy intensive industries, Yara will produce ammonia with significantly lower emissions. We provide digital tools for precision farming and work closely with partners at all levels of the food value chain to share knowledge and promote more efficient and sustainable solutions.

Founded in 1905 to solve the emerging famine in Europe, Yara has established a unique position as the industry's only global crop nutrition company. With 18,000 employees and operations in more than 60 countries, sustainability is an integral part of our business model.

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