

# Agromaster<sup>®</sup> Start Mini



## **Controlled Release Mini-Fertilizers**

The latest generation of starter fertilizers

[www.icl-sf.com](http://www.icl-sf.com)

**ICL** Specialty  
Fertilizers





## Why use ultra-localized fertilizers?



Although phosphorus has many benefits such as root development, more uniform and earlier crop maturity, improved flowering and seed formation, it is a nutrient with low mobility into the soil (1-2mm). In calcareous soils (pH>8) phosphorus can precipitate in calcium phosphates while in acidic soils it can be easily precipitated as iron or aluminum phosphates. Maximum availability of phosphorus occurs in a pH range of 6-7.

In low soil temperatures phosphorus availability is reduced considerably (up to 70% in soils at 10°C-13°C). By using mini-fertilizers, ultra-localized (close to the seeds), especially coated P based products, will significantly improve phosphorus availability and its uptake by the young root system.

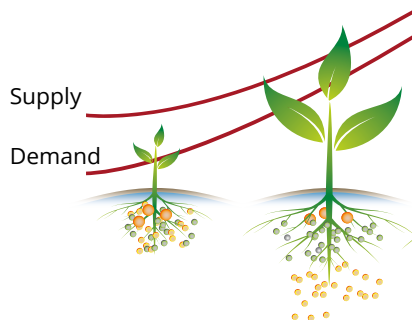


Ammonium is one of the most important forms of nitrogen which is taken up by the young plants. Ultra-localized mini fertilizers will pull the roots towards the fertilizer. This will promote a faster establishment of the plants.

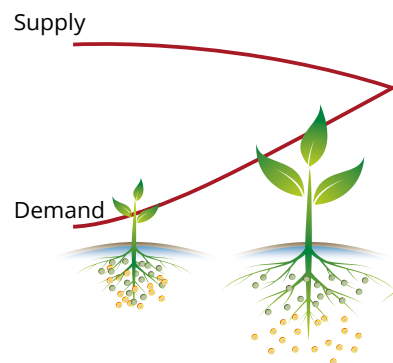
Certain conditions, such as low temperatures (lower than 15°C average daily temperature), water-saturated or low oxygen growing media, combined with low medium pH will suppress the function of nitrifying bacteria and cause ammonium to build up to toxic levels in the growing medium. With mini CRFs the nitrogen will be gradually released and thus stressful situations, especially in the cold season, will be avoided.

By using Controlled Release Fertilizers, the incidence of salt injury to the young root system, especially in the early stages, is significantly reduced or completely avoided!

CRF Application



Other Fertilizers



# How to use ultra-localized fertilizers?

**Agromaster Start Mini combines the standard mini-granular fertilizer effect with coated nutrients (nitrogen or both nitrogen and phosphorus) to ensure long-lasting feeding nutrition for plants.**

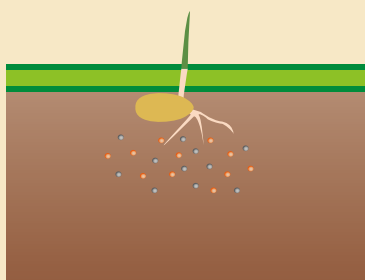
Agromaster Start Mini increases nutrient efficiency, especially phosphorus availability and its uptake by young root systems.

Apply Agromaster Start Mini at sowing time in furrows, close to the seed. Use an applicator designed for micro-granulated fertilizers for best results.



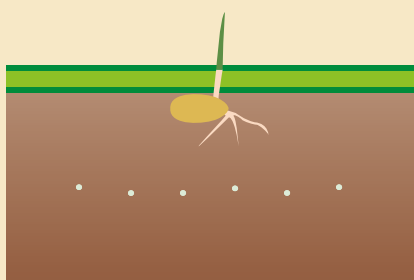
**Thanks to its higher number of mini granules (6.5 mil granules/ha) which are placed within 3-5 cm from the seeds, Agromaster Start Mini is a reliable source of nutrients for a faster establishment of the crop.**

## Phosphorus availability supplied by different types of fertilizers



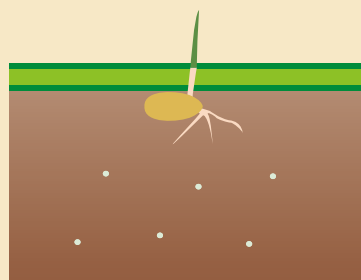
Agromaster Start Mini applied  
in furrow at seeding

(ultra-localized)



Conventional fertilizer applied  
in band at seeding

(5-6 cm apart from the seed)



Conventional fertilizer  
broadcasted and incorporated  
before seeding  
(into 5-10 cm soil depth)

## Benefits of Agromaster Start Mini



- 1 Controlled Released nitrogen and phosphorus for long-lasting effect
- 2 Improved root system for better efficiency of nutrients uptake
- 3 Faster establishment of the crop, avoiding stressful periods
- 4 Ultra-localized source of nutrients, safe for the young root system
- 5 Less nutrients for weeds to grow

# Agromaster® Start Mini

Agromaster Start Mini is a special range of mini- granular fertilizers with controlled release technology. The controlled release of N and P nutrients will feed the plants in the first stages of vegetation without affecting the germination and emergence of young plants.

## Controlled Release N&P



### 8-32-0+5MgO+9SO<sub>3</sub>+TE

- 8 % NITROGEN (N)  
7.4 % ammoniacal nitrogen (NH<sub>4</sub>-N)
- 32 % PHOSPHORUS PENTOXIDE (P<sub>2</sub>O<sub>5</sub>)  
24 % Phosphorus pentoxide (P<sub>2</sub>O<sub>5</sub>) water soluble
- 0 % POTASSIUM OXIDE (K<sub>2</sub>O)
- 5 % MAGNESIUM OXIDE (MgO)
- 9 % SULPHUR TRIOXIDE (SO<sub>3</sub>)

TE package (%) =  
0.125 Cu, 2 Fe, 0.75 Mn, 0.75 Zn

Item number	5079	Recommended dosage	25-30 kg/ha*
Coated N	72%	Direction of use	
Coated P	75%	Soil P availability: Low	
Average granule size	1.4 mm	Crops: arable, vegetables, salt sensitive crops	

### 10-43-0

- 10 % NITROGEN (N)  
10.0 % ammoniacal nitrogen (NH<sub>4</sub>-N)
- 43 % PHOSPHORUS PENTOXIDE (P<sub>2</sub>O<sub>5</sub>)  
38.7 % Phosphorus pentoxide (P<sub>2</sub>O<sub>5</sub>) water soluble
- 0 % POTASSIUM OXIDE (K<sub>2</sub>O)

Item number	7642	Recommended dosage	25-30 kg/ha*
Coated N	74%	Direction of use	
Coated P	74%	Soil P availability: Low	
Average granule size	1.5 mm	Crops: arable, vegetables, salt sensitive crops.	

### 12-44-0+5SO<sub>3</sub>

- 12 % NITROGEN (N)  
10.0 % ammoniacal nitrogen (NH<sub>4</sub>-N)
- 44 % PHOSPHORUS PENTOXIDE (P<sub>2</sub>O<sub>5</sub>)  
39.6 % Phosphorus pentoxide (P<sub>2</sub>O<sub>5</sub>) water soluble
- 0 % POTASSIUM OXIDE (K<sub>2</sub>O)
- 5 % SULPHUR TRIOXIDE (SO<sub>3</sub>)

Item number	5090	Recommended dosage	25-30 kg/ha*
Coated N	36%	Direction of use	
Coated P	36%	Soil P availability: Medium	
Average granule size	1.5 mm	Crops: arable, vegetables.	

\* In addition to regular base fertilizers





## Controlled Release N

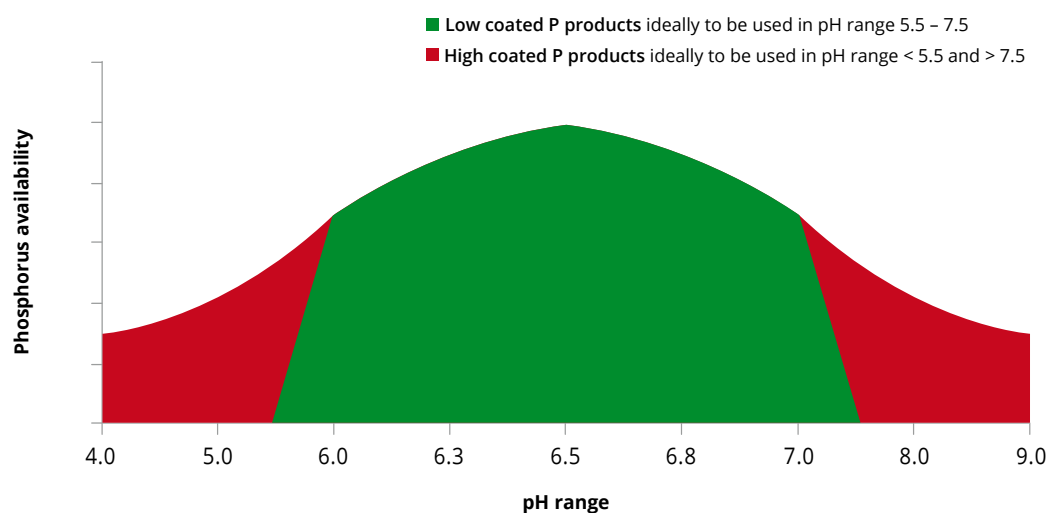
### 21-21-5+2MgO+15SO<sub>3</sub>

- 21 % NITROGEN (N)  
7.4 % ammoniacal nitrogen (NH<sub>4</sub>-N); 14.2 % urea nitrogen (Ur-N)
- 21 % PHOSPHORUS PENTOXIDE (P<sub>2</sub>O<sub>5</sub>)  
18.9 % Phosphorus pentoxide (P<sub>2</sub>O<sub>5</sub>) water soluble
- 5 % POTASSIUM OXIDE (K<sub>2</sub>O), water soluble
- 2 % MAGNESIUM OXIDE (MgO)
- 15 % SULPHUR TRIOXIDE (SO<sub>3</sub>)

Item number	5077	Recommended dosage	25-30 kg/ha*
Coated N	40%	Direction of use Soil P availability: Medium - High Crops: arable, vegetables.	
Coated P	0%		
Average granule size	1.5 mm		



### Choosing Agromaster Start Mini based on soil pH



\* In addition to regular base fertilizers

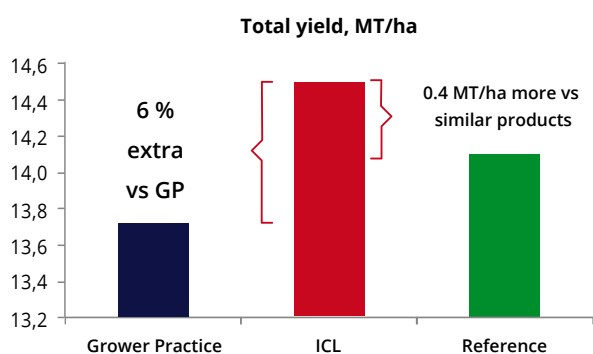
# Proven performance in field trials

## 6 % yield increase in Maize

**Trial objective:** To compare the efficiency of different starter fertilizers applied in furrow at seeding

**Treatments:** *Grower Practice (GP):* only Conventional Fertilizers - without mini starters (N-P<sub>2</sub>O<sub>5</sub>-K<sub>2</sub>O =227-98-51).  
*ICL:* GP + Agromaster Start Mini (21-21-5+2MgO+21SO<sub>3</sub>) at 25 kg/ha.  
*Reference:* GP+ Micro-granulated fertilizer (11-45-0+12S+2MgO+1Zn) at 25kg/ha

Economic evaluation	Grower practice	ICL	Reference
Yield, MT/ha	13.7	14.5	14.1
Yield (differences versus Grower Practice),%	-	6%	3%
Total cost of fertilizers, euro/ha	248.3	298.9	332.6
Gross income, euro/ha	1695.9	1792.2	1742.8
Gross income minus fertilizers cost, euro/ha	1447.6	1493.3	1410.1
Gross Income minus fertilizers cost (difference versus Grower Practice), euro/ha	-	45.7	-37.4

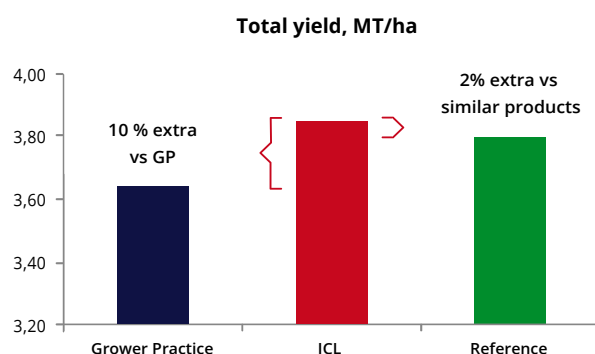


## 10 % yield increase in Sunflower

**Trial objective:** To compare the efficiency of different starter fertilizers applied in furrow at seeding

**Treatments:** *Grower Practice (GP):* only Conventional Fertilizers without mini starters (N-P<sub>2</sub>O<sub>5</sub>-K<sub>2</sub>O =65-52-52)  
*ICL:* GP + Agromaster Start Mini (21-21-5+2MgO+21SO<sub>3</sub>) at 25 kg/ha  
*Reference:* GP+ Micro-granulated fertilizer (11-45-0+12S+2MgO+1Zn) at 25kg/ha

Economic evaluation	Grower practice	ICL	Reference
Yield, MT/ha	3.55	3.90	3.82
Yield (differences versus Grower Practice),% w	-	10%	8%
Total cost of fertilizers, euro/ha	104.3	154.9	188.6
Gross income, euro/ha	1036.3	1139.3	1114.6
Gross income minus fertilizers cost, euro/ha	932.0	984.4	926.0
Gross Income minus fertilizers cost (difference versus Grower Practice), euro/ha	-	52.5	-6.0





With **Agromaster®**  
I know I am in control



*"I always use Agromaster Start Mini when seeding cereals and legumes. The reason is very simple: it is convenient, it improves the germination and allows me to do a top dress fertilization when the crop really needs it. Every year is different, but the results with Agromaster Start Mini are consistently good"*

**Santiago Garcés,**  
SAT Garcés, Cereal grower



ICL Specialty Fertilizers  
P.O. Box 40  
4190 CA Geldermalsen  
The Netherlands  
Tel.: +31 (0) 418 655 700  
Fax: +31 (0) 418 655 795  
Email: [info@iclsf.com](mailto:info@iclsf.com)  
[www.icl-sf.com](http://www.icl-sf.com)



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