Agromaster®

Precision Nutrition with Controlled Release Fertilizers

ICL Specialty Fertilizers

www.icl-sf.com

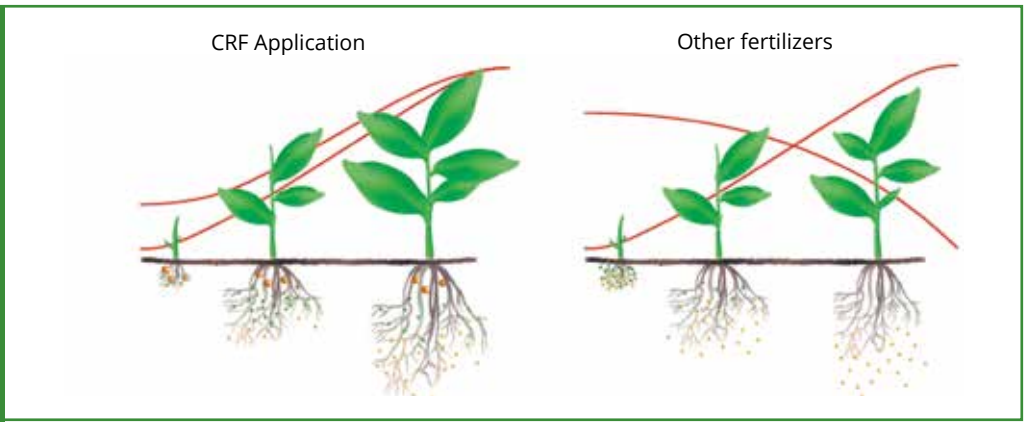
Controlled release fertilizers (CRF)

Less is More

Controlled Release Fertilizers are fertilizer granules covered with a semipermeable coating (a kind of membrane). After application water penetrates through the semi-permeable coating and starts to dissolve the nutrients present in the granule. The release of nutrients starts once they have been partially dissolved. A pump-like action is initiated due to differences in osmotic pressure (see diagram on page 4). The plant is able to take up the released nutrients.

CRF play an important role in improving yield, reducing nutrient losses and simplifying fertilizer application. These products help to regulate the nutrient levels through the entire plant's growth cycle. Younger plants are not harmed or stressed from excess salt levels, while mature plants have enough nutrition to last until the end of the growth cycle. A simple one time application of CRF delivers targeted nutrition that leads to healthy plants, uniform growth and optimal yield. This translates into maximum results with minimal effort.

With CRF, the supply of nutrient matches the demand of the plants to give both optimal growth and nutrient efficiency.



Fewer Applications
Reduced Leaching

Less fertilizer input

Lower Costs
Environmentally friendly

Agromaster®

Agromaster, Superior in performance but simple to use

For enhanced crop production performance, your fertilizer program must be superior to maintain a secure and profitable business. For this reason, ICL created Agromaster - a product that is superior in performance, but simple to use.

Fertilizers have to work optimally every day of the season. Agromaster combines ICL's advanced technology with specially selected conventional granules. This powerful combination provides nitrogen control and high-quality performance in one uniform product.

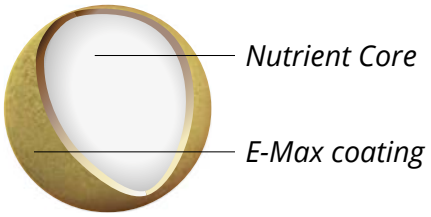
Benefits of Agromaster

1	Higher or equal yield with less mineral input due to continual feeding
2	Less applications = less costs
3	Better for the environment due to reduced leaching
4	Enhanced crop uniformity thanks to controlled nutrition
5	Greater protection against early season "salt stress"

I advise my clients Agromaster because it guarantees a supply of constant nitrogen for the entire cycle crop.

Tiziano Biancari
Agronomist - Rome

E-Max Release Technology

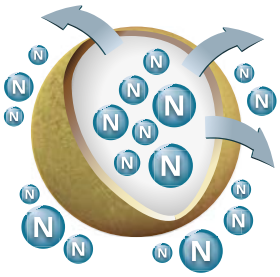


E-Max release technology is a polymer coating which improves nutrient use efficiency. The release of nutrients is based upon moisture and temperature, offering predictable longevities.
Influenced by the temperature, the semi-permeable coating regulates the daily release of nutrients. At higher temperatures the release of nutrients will be faster. At lower temperatures it will be slower, in line with the nutritional needs of the plant.

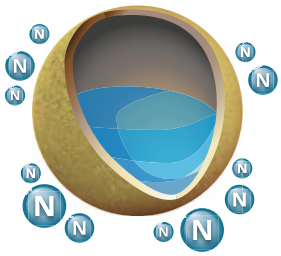
Working principle

Under influence of the soil temperature moisture penetrates the semi permeable E-Max coating and dissolves the nutrient core

The moisture uptake and dissolution of the nutrient core results in buildup of osmotic pressure inside the E-Max coated granule



The osmotic pressure causes the nutrient solution to release through microscopic pores in the E-Max coating



The nutrients are fully released and the E-Max coating desintegrates into the soil

Trial case

Objective: Prove the efficiency of Agromaster compared to the growers practice in Melon

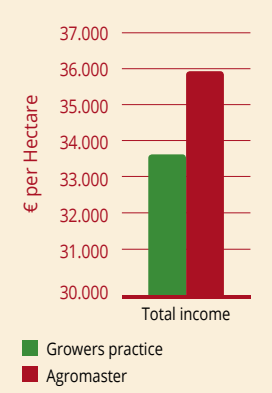
Where: CEHM trial station, Marsillargues, France

Crop: Melon - Variety Gandalf

Treatments: **Growers Practice:** N-inhibitor X Patentkali as base fertilizers
ICL treatment: Agromaster 12-5-19+4MgO
(Both treatment received same amount of nutrients)

Fertigation: Both treatments received the same fertigation program

	Growers practice	ICL treatment (Agromaster)
Cat 1: High quality (mt /ha)	15,2	17,2
Cat 2: Low quality (mt /ha)	15,1	13,0
Total income /ha	€ 33.400,- /ha	€ 36.100,- /ha
Extra costs (compared to grower practice)		€ 107,- /ha
Net Extra Profit /ha (vs grower practice)		**€ 2.593,- /ha**



Why Agromaster performs better?

Using Agromaster controlled release fertilizer, the nitrogen is released gradually, following the growth stages and contributing to higher quality.

Conclusion

Agromaster as a base fertilizer increased the income per ha with **8.1%** due to better melon quality.

ICL's vision on a more sustainable way of farming by using CRF

EFFICIENCY • ECONOMY • ECOLOGY

Efficiency

- ✓ Improving nutrition delivery and efficiency

Economy

- ✓ Reducing fertilizer, labor and resource input
- ✓ Generating optimal yield per season

Ecology

- ✓ Minimizing nutrient loss by reducing leaching, volatilization and runoff

Agromaster Portfolio (Breakdown in %)

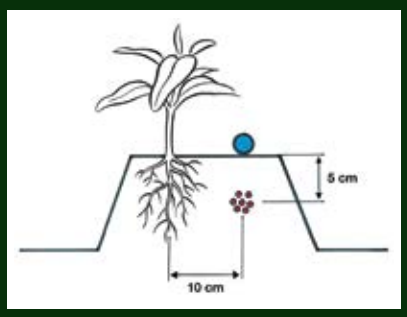
Product	Formulation	Item code	Longevity*	Coated N	Coated P
Agromaster	25-5-10+2MgO	5076	2-3	32	-
Agromaster	12-26-9+3MgO	5074	2-3	34	-
Agromaster	12-5-19+4MgO	5072	2-3	32	-
Agromaster	19-5-20+4MgO	5073	2-3	34	-
Agromaster	16-10-16+2MgO	5075	2-3	32	-
Agromaster Start Mini	21-21-5+2MgO	5077	2-3	40	-
Agromaster	20-5-9+3MgO	5115	2-3	60	-
Agromaster	11-11-21+3MgO	5114	2-3	40	-
Agromaster	15-7-15+3MgO	5111	2-3	30	-
Agromaster	15-25-10+3MgO	4285	2-3	60	-
Agromaster	26-5-11+2MgO+TE	4259	2-3	40	48
Agromaster	15-24-10+3MgO	4288	4-5	65	-
Agromaster	24-0-6+7MgO+TE	5015	5-6	81	-

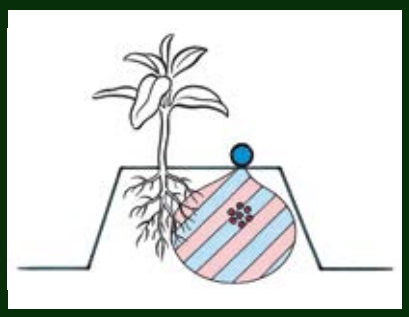
** Longevity at 21 °C*

This is a selection of typical Agromaster formulations. Contact your local ICL sales adviser for the complete portfolio.

Application recommendations

- Agromaster products are developed for field application
- Agromaster can broadcasted or it can be row, spot and bed applied
- When applied in the row or spot, make sure the product is 10 cm from the plants (see figure)
- The recommended application method depends on the crop and selected product. (please contact your local ICL sales adviser for a customized recommendation)
- Do not put Agromaster in the planting hole (see figure)
- For the best performance Agromaster should be incorporated into the first 5 cm of soil
- Apply Agromaster before planting or 20-30 days after seeding
- If there is a drip line, apply Agromaster close to the drippers (see figure)
- It is recommended to irrigate well after application





	Coated K	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	SO_3	E-Max Technology	Poly-S Technology	Resin Technology
	-	25	-	5.3	19.7	5	10	21.0	✓		
	-	12	-	6.1	5.9	26	9	9.0	✓		
	-	12	-	1.4	10.6	5	19	17.0	✓		
	-	19	-	1.4	17.6	5	20	19.5	✓		
	-	16	-	6.6	9.4	10	16	27.0	✓		
	-	21	-	4.8	16.2	21	5	15.0		✓	
	-	20	-	8	12	5	9	31.0	✓		
	-	11	-	6.5	4.5	11	21	30.0	✓		
	-	15	-	8.1	6.9	7	15	34.0	✓		
	-	15	-	6.0	9.0	25	10	16.6		✓	
	39	26	1.8	3.0	21.2	5	11	16.0		✓	✓
	-	15	-	5.3	9.7	24	10	24.2		✓	
	15	24	2.8	3.2	18.0	-	6	24.0		✓	✓

I like Agromaster because I can reduce the fertilization steps and get a better result, working less.

Alessandro Mengoni

Società Agricola F.lli Mengoni
Fiumicino (RM)

Agromaster®

Grows your crops better

Makes your life easier

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@icl-group.com
www.icl-sf.com

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LLOYD'S REGISTER LRQA ISO 14001
LLOYD'S REGISTER LRQA OHSAS 18001

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