MICRO-GRANULAR BASE FERTILISER · WINTER CEREALS · TÜRKIYE · 2026 EDITION

The first three weeks decide the wheat crop. What sits next to the seed decides the first three weeks.

A guide for distributors of cereal inputs in Türkiye: why phosphorus and zinc go missing in **calcareous soil** just when the seedling needs them, and what **ultra-localised placement next to the seed** changes.

Agristart Magnum · NP 10-48-0 with 1% zinc · micro-granular, 0.8 to 1.6 mm · 30 to 60 kg/ha in the seed line · Fertinagro Biotech

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A GUIDE FOR DISTRIBUTORS

What you take away from this guide

01 **Why your soil, not your seed, limits emergence**
Lime, high pH and zinc deficiency in Central Anatolia: what the soil surveys say, and why the damage shows without leaf symptoms.

02 **Why distance matters in a dry autumn**
Broadcast base fertiliser against placement in the seed line: the same nutrients, a very different meeting with the root.

03 **What happens next to the seed, and how it compares with broadcast**
Three mechanisms declared on the product sheet, one grade (10-48-0 with 1% zinc, 30 to 60 kg/ha) and a practice-by-practice comparison.

04 **How to read a soil test and set up a one-field comparison**
DTPA zinc thresholds, five questions to ask any supplier, and a protocol so the result is yours.

05 **Who makes the micro-granule you already sell**
Fertinagro Biotech, Teruel: own technology, patent EP4306500A1, one technical team to call.

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Your soil, not your seed, is holding back emergence

THE DIAGNOSIS · CALCAREOUS SOILS OF CENTRAL ANATOLIA

50% almost half of Türkiye's cultivated land tested zinc-deficient (DTPA, national survey 1994)

In Çakmak's surveys of the 1990s, Central Anatolia held **half of the country's wheat area, 4.5 million hectares**. Its soils were alkaline, average pH 7.9, most held over 20% lime, and almost **90% of samples around Konya and Eskişehir** tested zinc-deficient.

The zinc is there, 40 to 60 mg/kg in total. High pH and free lime lock it, so the young root cannot take it. The same chemistry also immobilises phosphorus: a general soil mechanism, not a figure from the Turkish surveys.

Source: I. Çakmak, Sabancı University, IFA Annual Conference 2005; soil survey Çakmak et al. 1996, Plant and Soil 180.

Three soil facts that decide the start of the crop

The same seed, the same drill, a different soil. What the surveys found on zinc in the main wheat region, and what lime does to phosphorus.

- **Lime above 20%** — In **more than 65% of soils**. Calcium carbonate precipitates zinc into forms the root cannot use, and it does the same to phosphorus.
- **Dry and poor in organic matter** — 280 to 325 mm of rain a year. **Low moisture and low organic matter** cut the chemical availability of zinc further.
- **Hidden hunger** — Growth and yield fall **before any chlorosis or necrotic patch shows** on the leaf. By the time the symptom is visible, the correction is late.

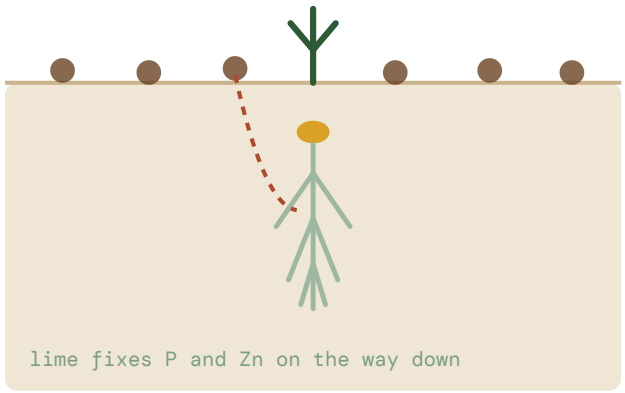
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In a dry autumn, the distance to the root is the yield variable

PLACEMENT · BROADCAST BASE FERTILISER AGAINST THE SEED LINE

BROADCAST BASE FERTILISER

The granule sits on the surface and the root starts below



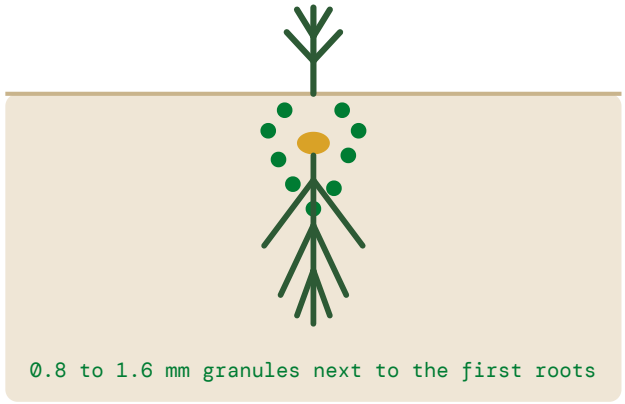
lime fixes P and Zn on the way down

Nutrients spread across the whole surface. The seedling meets a fraction, **after the lime has had first pick**, and only if there is moisture to move them.

cm away The granule sits centimetres from the first root, beyond soil that fixes P and Zn.

MICRO-GRANULE IN THE SEED LINE

The granule and the first root share the same seed line



0.8 to 1.6 mm granules next to the first roots

The whole dose is concentrated where the plant starts. **The advantages of fertigation, in rainfed cereal**: that is how the product sheet describes it.

mm away The granule sits millimetres from the first root, in the seed line, not on the surface.

Rainfed Central Anatolia gets 280 to 325 mm a year, and 2024-25 was the driest autumn and winter in 65 years. With little moisture, a granule on the surface is a granule the seedling may never meet.

Rainfall: Çakmak 2005. Drought: TÜİK 2025 crop forecast, Hürriyet Daily News.

ONE PASS, THREE THINGS DONE

1. **Drill with a micro-granule applicator**
   The seed drill carries the starter; no separate spreading.
2. **30 to 60 kg/ha go into the seed line**
   Dose by expected yield, ultra-localised next to the seed (product sheet).
3. **Seeding and fertilising together**
   Lower operating cost and fewer passes, as declared on the sheet.

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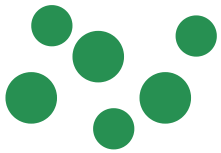
Three things happen next to the seed

THE MECHANISM · AS DECLARED ON THE AGRISTART MAGNUM PRODUCT SHEET

01 Contact

MICRO-GRANULOMETRY

Granules of **0.8 to 1.6 mm** multiply the contact surface between fertiliser, soil and root, improving the absorption of nutrients. Smaller granules mean more granules per kilo, and more points of contact along the row.



WHAT YOU TELL THE GROWER

Same nutrients, more granules per metre of row: the first root does not have to search.

02 Root

MULTIPHOS® TECHNOLOGY

Better **root development in the early phases** of seedling growth, in all types of crops, with 48% P_2O_5 placed where the first root grows. Phosphorus barely moves in soil; here it does not need to.



WHAT YOU TELL THE GROWER

A bigger root before winter is the plant's insurance against a dry spring.

03 Soil life

ACTIBIÓN

A formulation that **gives energy to the soil microbiome**: the sheet calls it the fallow effect applied in the fertiliser. Low in chloride, suitable for vulnerable zones.



WHAT YOU TELL THE GROWER

The fertiliser feeds the soil life around the seed, not only the plant: the sheet's fallow effect.



+5 to 8%

viable plants at emergence, depending on sowing rate: the homogeneous, vigorous emergence declared on the Fertinagro product sheet.

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One grade: 10-48-0 with 1% zinc

THE PRODUCT · AGRISTART MAGNUM, COMPLEX NP FERTILISER WITH MICRONUTRIENTS

The three numbers are **N · P_2O_5 · K_2O**. Agristart Magnum is the base fertiliser at a reduced dose, placed with the seed: high phosphorus with a nitrogen starter and zinc, **30 to 60 kg/ha** for winter cereals. The season's nitrogen comes separately.

10 · 48 · 0

+ 1% zinc

46% of the P_2O_5 water-soluble, 48% soluble in neutral ammonium citrate. All nitrogen in ammoniacal form.

GRANULOMETRY	**0.8 to 1.6 mm**
CHLORIDE	**Low**
VULNERABLE ZONES	**Suitable**
STORAGE	**Away from sun and moisture**

30 TO 60 KG/HA · NEXT TO THE SEED · WINTER CEREALS

What the micro-granule contains

Declared content, as on the product sheet.

- N — **Total nitrogen 10%**, ammoniacal: a starter dose, not the season's nitrogen.
- P — **P_2O_5 48%**, 46% water-soluble: available where the first root grows.
- Zn — **Total zinc 1%**, in the same granule, in the same seed line.

Zn 1%
SEED LINE

Why 1% zinc matters here: **below 0.4 mg/kg of DTPA zinc, wheat responds to zinc, durum most of all**, and zinc applied to the soil or carried in the seed improved seedling establishment and winter hardiness in Çakmak's trials (2005). Agristart Magnum puts zinc where the first root grows; it does not replace a soil correction programme on a severely deficient field.

Fertinagro Biotech · Teruel · Made in Spain · Patent EP4306500A1

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Broadcast base fertiliser or micro-granule in the seed line

A COMPARISON OF PRACTICE · HOW EACH ONE MEETS THE SEEDLING, NOT A YIELD CLAIM

PRACTICE	WHERE THE NUTRIENT LANDS	PASSES AT SOWING	ZINC AT THE SEED	DOSE LOGIC
Broadcast DAP or NPK base dressing on the surface	**Whole surface** Far from the seed. The root reaches it late, and only with moisture.	◐ **Depends on the drill** A spreading pass before drilling, or a combined drill that places it across the row width, not next to the seed.	◐ **Only in a Zn grade** DAP carries none. Zinc-amended NP and NPK grades exist in Türkiye, but broadcast: the zinc lands away from the seed.	**Full field rate** Lime takes its share before the seedling does.
Broadcast plus zinc later foliar or soil correction	**Surface, then leaf** The zinc arrives when the leaf shows the symptom, on a plant that has already lost growth.	✕ **One more pass** Spread or drill, then a foliar pass when the symptoms show.	◐ **After the symptom** Hidden hunger has already cost growth by then.	**Full rate plus a correction** Paid twice, delivered late.
Agristart Magnum in the seed line micro-granular base fertiliser	✓ **Seed line** With the seed, 0.8 to 1.6 mm granules within reach of the first root.	✓ **One** Seeding and fertilising in the same pass (sheet).	✓ **1% in the granule** Zinc where the first root grows, from day one.	✓ **30 to 60 kg/ha** Reduced dose, same performance, as declared on the sheet.

The micro-granule carries the phosphorus at a reduced dose, as the sheet declares; the nitrogen plan stays. Broadcast phosphorus on top is for the soil test and your technician to decide. Put your own local prices in before showing this to a grower.

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Read the soil test before you choose the starter

A TOOL · DTPA ZINC THRESHOLDS FOR CALCAREOUS SOILS, FROM ÇAKMAK'S CENTRAL ANATOLIA TRIALS

≥ 0.5
MG ZN/KG DTPA

Adequate for zinc

Zinc is not the first limiting factor. Placement still decides whether phosphorus reaches the first root in a dry autumn.

0.4 to 0.5
MG ZN/KG DTPA

Borderline, watch durum first

Close to the critical level used for calcareous soils. Durum wheat is the most sensitive cereal; barley and bread wheat tolerate more.

< 0.4
MG ZN/KG DTPA

Responsive: put zinc in the sowing plan

In Çakmak's field trials wheat responded significantly to zinc below this level, and more under rainfed than irrigated conditions.

≤ 0.1
MG ZN/KG DTPA

Severe: correct the soil, not only the starter

In Çakmak's trials, fields where wheat yielded about 0.25 t/ha rose six- to eightfold with zinc fertilisation. Soil-applied zinc leaves a residual effect of up to three years.

Four lines to read on the same report

1. **pH.** The further above neutral, the more the lime chemistry rules; Central Anatolia averaged 7.9.
2. **$CaCO_3$.** Over 20% in most of the region: zinc precipitates (Çakmak), and phosphorus follows the same chemistry.
3. **Organic matter.** Low values cut zinc availability further.
4. **Autumn rainfall.** The drier the start, the more placement matters.

Hidden hunger: the yield loss starts before the leaf shows anything. The soil test sees it; the eye does not.

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Five questions a distributor asks before switching

A TOOL · THE ANSWERS YOUR AGRONOMIST WILL WANT, WITH THE ONES STILL OPEN MARKED

1

Why 30 to 60 kg/ha next to the seed instead of a full rate broadcast?

Because placement, not tonnage, decides what the seedling meets. **The sheet declares a reduced dose with the same performance.**

2

Does it run through the drills my growers already use?

Granules of 0.8 to 1.6 mm, for micro-granule applicators. **Which applicators: to confirm with the Fertinagro technical team.**

3

Does 1% zinc fix a deficient field?

No. It supports the seedling where it starts. **A severely deficient field needs a soil correction programme as well.**

4

Winter cereals only, or spring cereal too?

The sheet names winter cereals. **Spring use: ask your Fertinagro area manager.**

5

Where are the trials?

Ask your Fertinagro area manager for the trial documentation available for your crop. **And run the one-field comparison on the next page: the result is yours.**

HOW TO READ THE ANSWERS

If the supplier answers with price per tonne, it is not a conversation about emergence.

A starter is judged on what the field looks like three weeks after drilling, plant counts included. Ask for placement, granulometry and zinc before you ask for the price.

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Set up a one-field comparison at the next sowing

A PROTOCOL · SO THE RESULT BELONGS TO YOU AND YOUR GROWER, NOT TO A BROCHURE

One field, two halves, the same seed and the same day. **What you measure at three weeks is what this guide is about.** Agree the protocol with the Fertinagro area manager or your trusted technician before drilling.

01 **Split the field**

One half with the usual broadcast base dressing. The other half with Agristart Magnum in the seed line, at the dose set with your technician within 30 to 60 kg/ha, and no other phosphorus on that half. Same variety, seed rate and date.

02 **Count plants per square metre at emergence**

Five points per half, three weeks after drilling. Write the counts down with the date. This is the number the product sheet speaks about.

03 **Photograph roots at tillering**

Dig three plants per half, rinse, photograph side by side with the date. Root mass in early phases is the second claim on the sheet.

04 **Keep the soil test next to the result**

pH, lime, organic matter and DTPA zinc of that field. Without them, two fields cannot be compared next season.



Share your counts. Send the plant counts and the soil test to your Fertinagro area manager: that is what turns one field into an argument for the next one.

The micro-granule you already sell has a manufacturer

FERTINAGRO BIOTECH · TERUEL, SPAIN · OWN TECHNOLOGY, OWN FACTORY

Agristart Magnum is made by **Fertinagro Biotech**, the company behind the NovoPhos® phosphorus technology and the Duramon® urease inhibitor. The micro-granule in your warehouse comes from the same factory and the same technical team.

1. **Own technology, protected.** Multiphos® and Actibión are Fertinagro developments; the product carries patent EP4306500A1.

2. **A range, not a single bag.** Agristart is a range of complex micro-granular fertilisers. Magnum is the high-phosphorus grade with zinc, for winter cereals.

3. **A technical team you can reach.** Dose, applicator, soil test reading and the one-field protocol: questions go to Ikram Wali and the Fertinagro technical team in Teruel, not to a call centre.

FERTINAGRO TECHNOLOGIES

Multiphos® · Actibión · NovoPhos® · Duramon® MCDHS



EP **Patent EP4306500A1** applied to the product

ES **Made in Spain** Teruel, Fertinagro Biotech S.L.

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NEXT STEP

Plan the 2027 sowing with us

Field, soil test, dose, applicator and the one-field comparison: Ikram Wali, Middle East Area Manager at Fertinagro Biotech, plans it with your agronomist. Thirty minutes is enough to decide what goes next to the seed next autumn.

The crop is decided in the first three weeks.
So is the choice of what sits next to the seed.

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