



Revive Your Soil. Reclaim Your Harvest

What is Ground Improver?

Ground Improver is a food-grade, water-soluble soil conditioner made from advanced polymer technology that improves soil structure, water retention, and plant root development.

Ground Improver is safe, low-dose, and biodegradable, ideal for both traditional and sustainable agriculture.

How Ground Improver Works:

Transforms your soil in **3** powerful ways with Ground Improver

1 Mechanically

It loosens compacted soils, increases porosity, reduces wind and water erosion, and binds small soil particles together.

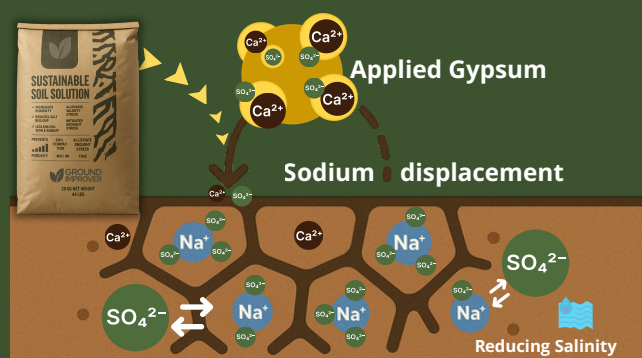
- Improved porosity boosts air and water flow to roots
- Creates stable soil structure that supports plant anchoring
- Helps break crusting for better seed germination



2 Chemically

It facilitates sodium displacement when applied with calcium-rich materials like gypsum, leading to a noticeable reduction in soil salinity within approximately 2 to 3 months.

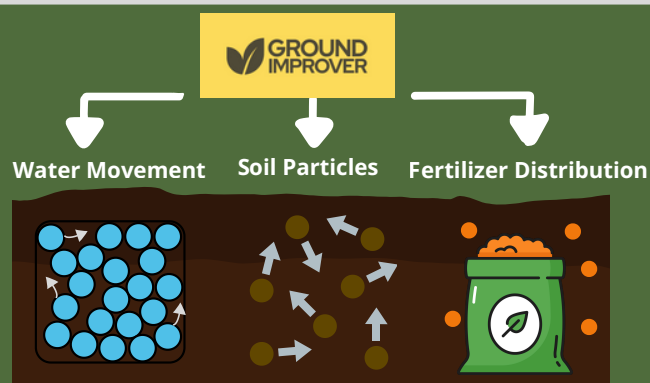
- Ground Improver breaks CaSO_4 (gypsum) to release reactive sulfate (SO_4^{2-})
- SO_4^{2-} binds with sodium (Na^+) in the soil to form Na_2SO_4
- Na_2SO_4 is water-soluble and flushed away with irrigation or rain, reducing sodium levels



3 Physically

It binds loose particles of water, soil, and fertilizers. This creates porosity while simultaneously reducing erosion by stabilizing the soil.

- Keeps nutrients in the root zone
- Supports steady water access to plants
- Prevents runoff and evaporation





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When to Apply:



Apply in dry and calm weather to avoid wind loss or clumping.



The ground should be dry during application.



Best time:



Autumn
(post-harvest)



Before/during
sowing



Or when
rainfall is
expected.

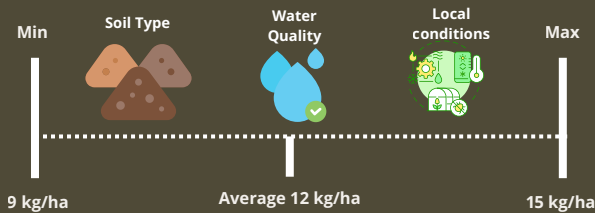
Application timing should consider the crop's growth stage, not just seasonality.

Do not apply when crops are already growing, as incorporation into the soil won't be possible.

Dosage:

Regular Treatment:

Average 12 kg/ha (10,000 m²), adjusted by soil type, water quality, and other local conditions.



For Better Distribution



Mix 1 part Ground Improver + 2 parts gypsum or fine sand.



Dry Mixing



- Mixing should be done dry before loading into application equipment to avoid clumping.



Avoid Clumping



Uniform
Spreading

- Ensure both Ground Improver and gypsum (or filler) are completely dry before mixing to maintain uniform flow through equipment.

Recommended Equipment :

These ensure fine and uniform spreading, essential for performance.



Fine seed spreader



Pneumatic seed drill



Agricultural
drones



Plow-mounted
applicators



Manual tools
(small areas only)



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Follow these **4** essential steps to ensure Ground Improver is applied effectively and activated properly for optimal soil transformation.

Step-by-Step Installation Guide:

1 Calibrate Your Equipment



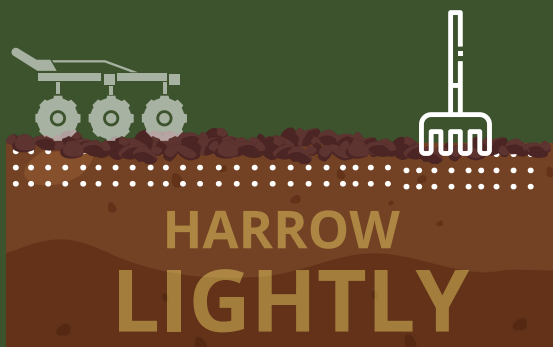
- Test a 50m section before full application.
- Adjust opening size and driving speed.

2 Apply Evenly



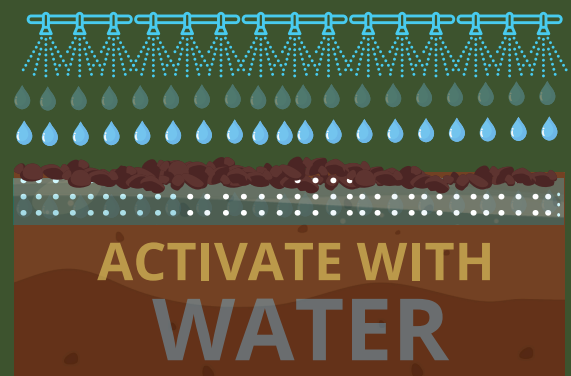
- Spread Ground Improver (or the mix) uniformly across the field.

3 Harrow Lightly



- Incorporate into topsoil (recommended depth: 3 cm) to protect product from sunlight and improve contact with soil.

4 Activate with Water

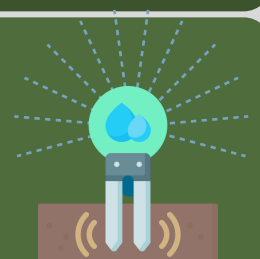


- Irrigate 3 times within 7 days or schedule before rainfall.
- Moisture is essential to dissolve and activate the product.



Reduce Irrigation After Treatment

After Ground Improver application, mechanical irrigation needs may reduce by an average of 40% (25–50% water reduction), even if sensors indicate low moisture. This applies to irrigated fields, plantations, and greenhouses.



Reduced Irrigation

Desalination Instructions (for High-Sodium Soils)

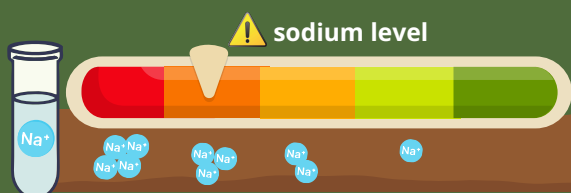
Why?

Excess sodium in soil leads to poor structure, hard crusting, reduced water infiltration, and stunted root growth. Over time, it blocks essential nutrient uptake and damages soil health.



Before You Start

1. Conduct Sodium Level Test



- Conduct a soil test to identify sodium levels (consult Ground Improver Specialist for lab guidelines).

2. Identify Problem



- Target fields with white crusts, poor drainage, or stunted growth.

Desalination Dosage:

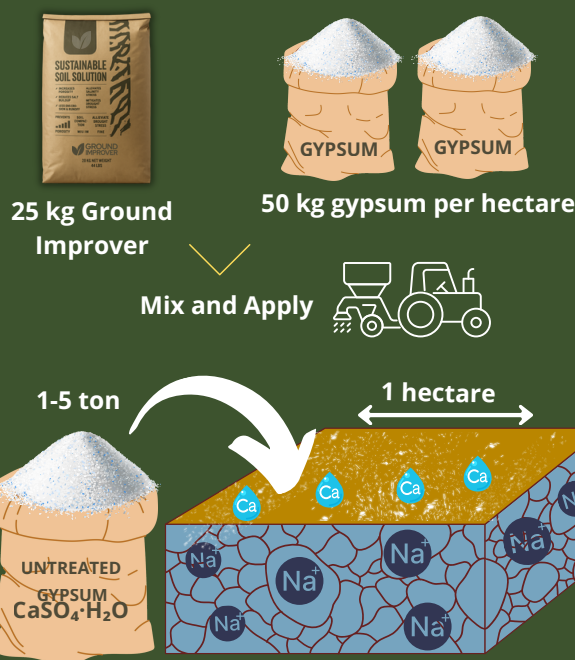
- Average gypsum dosage: 2.5 tons/ha (range: 1–5 tons depending on soil salinity).

1. Mix & Apply (Initial Blend)

- Use 25 kg Ground Improver + 50 kg gypsum per hectare
- Mix thoroughly and apply using calibrated spreader

2. Apply Untreated Gypsum ($\text{CaSO}_4 \cdot \text{H}_2\text{O}$) Separately

- Spread 1–5 tons of untreated gypsum per hectare over the same area
- This ensures adequate calcium supply for sodium exchange



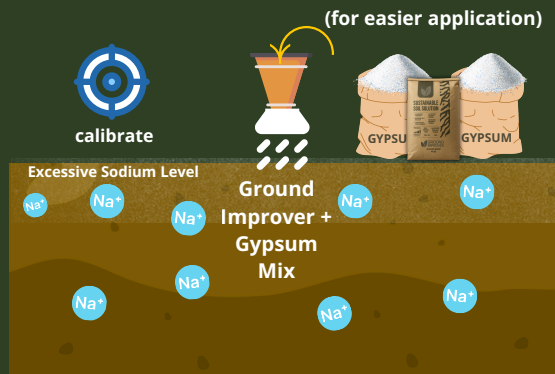
Important Note:

- Do not premix the large gypsum volume (1–5 tons) with Ground Improver.
- Doing so can lead to clumping, uneven application, and ineffective treatment.

Desalination Instructions (for High-Sodium Soils)

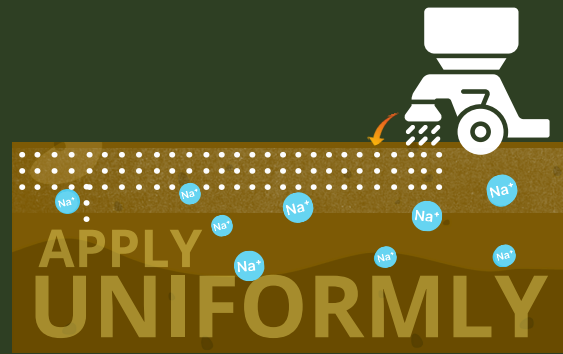
Step-by-Step Desalination Guide:

1 Spread Ground Improver + Gypsum Mix



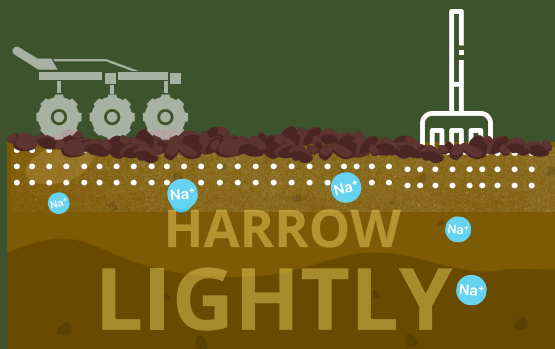
Mix helps spread Ground Improver more evenly
Use calibrated equipment for even distribution

2 Apply Untreated Gypsum Separately



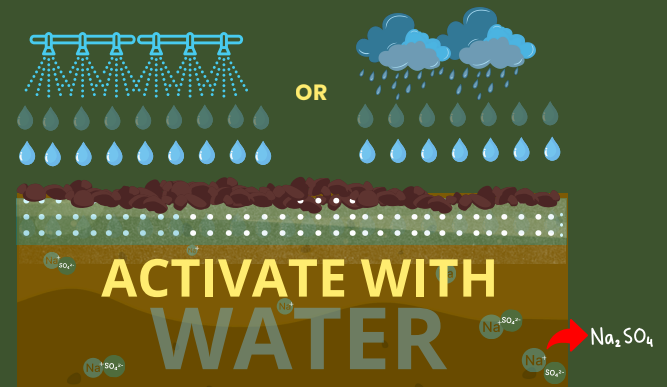
Apply 1-5 tons untreated gypsum uniformly.
Average dose: 2-5 tons/ha (adjust as per soil salinity).

3 Harrow Lightly



Lightly incorporate both into the topsoil (3-5 cm depth) using a harrow or mixing tool.

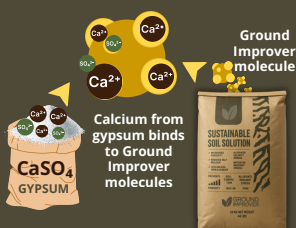
4 Irrigate 3 Times (or Use Rain)



Irrigate 3 times within 7 days or apply before expected rainfall to activate Ground Improver.

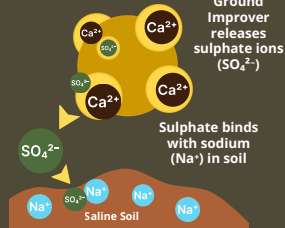
How It Works (Chemistry Overview)

1



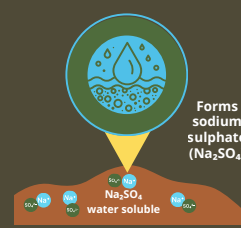
Ground Improver binds calcium from gypsum (CaSO_4).

2



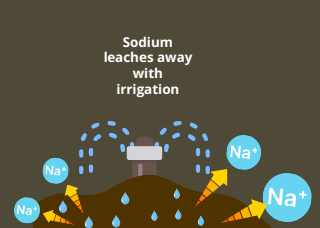
Ground Improver releases sulphate, which bonds with sodium (Na^+).

3



Sodium sulfate (Na_2SO_4) is known to be water-soluble.

4



Sodium is leached away through irrigation or rain.

Note: Never wrap the plant's roots with Ground Improver. It blocks oxygen and prevents the roots from breathing.

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Benefits of Ground Improver

- Restores saline soils
- Decreases erosion and water runoff
- Reduces fertilizer leaching
- Enhances water retention and promotes root zone health

Summary Table, Mistakes to Avoid & FAQs :

Item	Regular Treatment	Desalination Treatment
Ground Improver dosage	Average 12 kg/ha	25 kg/ha
Gypsum (small)	Optional (or sand) <small>Used as a carrier to increase volume and ensure even spreading.</small>	50 kg/ha (with Ground Improver)
Untreated Gypsum $\text{CaSO}_4 \cdot \text{H}_2\text{O}$ (bulk)	Not used	1-5 tons/ha (separate) <small>can use $\text{CaSO}_4 \cdot \text{H}_2\text{O}$ (untreated gypsum) for cost-effectiveness or CaSO_4 (treated gypsum); both are effective.</small>
Equipment	Spreader/Drill/Drone	Spreader/Drill/Drone
Irrigation needed (mechanical irrigation or natural rainfall)	Yes (3x in 7 days)	Yes (3x in 7 days)
Purpose	Soil structure, water retention, reduce fertiliser, increasing yields	Salt removal & soil recovery

Note: Same gypsum can be used in both treatments; particle size flexibility



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Mistakes to Avoid

- Mixing Ground Improver with large gypsum quantities (1–5 tons) → prevents even application.
- Skipping irrigation → prevents activation
- Not harrowing → leaving it under the sunlight degrades Ground Improver fast
- Applying during windy/wet weather → uneven spread, product loss
- Not mixing dry materials correctly → poor spread pattern



Frequently Asked Questions

Q: Can I mix Ground Improver with fertilizers?

A: Yes, but only when both materials are dry. Avoid liquid blends unless previously tested.

Q: How long does Ground Improver stay active in the soil?

A: It begins working immediately and remains active for 2–3 years, depending on soil and irrigation practices.

Q: Is Ground Improver safe for all types of crops?

A: Yes — it is food-grade, biodegradable, and non-toxic. Suitable for all agricultural crops.

Q: How do I know if my soil needs desalination?

A: Look for signs like stunted crops, poor drainage, or white surface crusting. Sodium levels above 150–180 ppm typically require treatment (consult your lab).

Q: Can I apply Ground Improver during rainfall?

A: No. Contact with water turns Ground Improver into a slimy gel, which can clog spreading machine. Always apply dry. (Tip: Clean equipment dry with compressed air. If gelled, rinse thoroughly with water.)

Q: What happens if I apply too much Ground Improver?

A: Overapplication does not cause harm. Ground Improver is water-soluble, higher doses will move deeper into the soil profile and may enhance deeper soil conditioning. However, follow recommended rates for cost-effectiveness and uniform application.

Q: Does Ground Improver replace gypsum?

A: Ground Improver takes calcium from gypsum and releases sulfate. The sulfate grabs sodium and turns it into a form that dissolves in water and washes away—the result is lower sodium in the soil.

CONTACT