

Driven by nature. Backed by science.

PRODUCT CATALOG · LIQUID

Liquid Foundation Products

Inoculum, food sources, carbon and potassium

Six liquids that ride in the same tank as your fungicide, insecticide or nutrient spray.

- **Sigma Bio inoculum** plus four food and carbon sources.
- **Weekly rates** sized to your spray interval.
- **Compatible** with most IPM and fertilizer applications.

Build your foundation today. Follow the science.

6
liquids · one tank

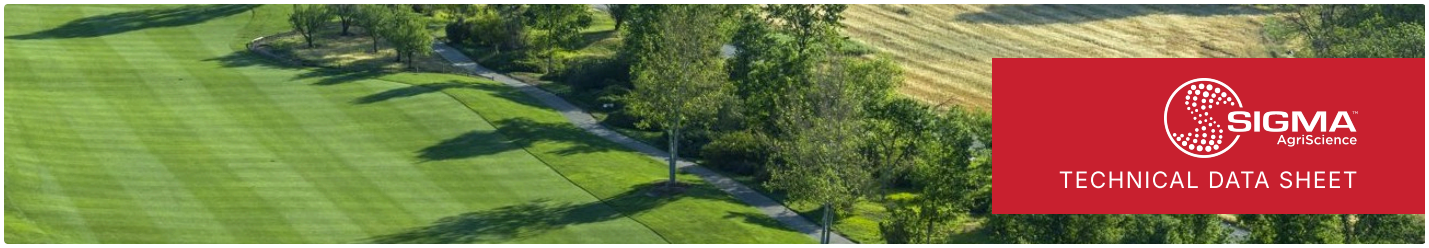
Liquid Foundation products

Inoculum, food sources, carbon and potassium

The Sigma Liquid Foundation Program rides in the same tank as your fungicide, insecticide, PGR, wetting agent or nutrient spray. Rates are per acre per week; multiply by the weeks between sprays.

Product	Role	Rate / acre / week
Sigma Bio	Three-in-one biological: Bacillus, mycorrhizae, Trichoderma	**11 oz**
Sigma Seaweed	Long-term food source and translocator	**22–44 oz**
Sigma Molasses	Short-term food source	**11 oz**
Sigma Microalgae	Mid-range food source: proteins, lipids, carbohydrates	**22 oz**
Sigma Biochar 5m	Long-term home for the biology	**22 oz**
Sigma K-Ferm	Acid-complexed potassium 0-0-12	**22–44 oz**

Data sheet for each product follows. K-Ferm: see the K-Ferm technical sheet.



BIO
Liquid · dormant suspension inoculum

Sigma Bio

Three-in-one biological: Bacillus, mycorrhizae, Trichoderma

A concentrated microbial consortium, the same organisms carried in every Sigma granular, in a dormant suspension that mixes with the active ingredients already in your spray program. Activates on contact with organic matter.

Input efficiency
Microbes mine the surrounding soil to bring water and nutrients otherwise lost to leaching back to the plant.

Stress tolerance
Supports drought tolerance and tolerance of salinity.

Root health
Bacillus and Trichoderma colonize the root zone and support root and shoot biomass.

Active ingredients

Total beneficial bacteria	**17.0 billion CFU / gal**
Bacillus subtilis	**750,000 CFU / mL**
Bacillus amyloliquefaciens	**750,000 CFU / mL**
Brevibacillus laterosporus	**1,500,000 CFU / mL**
Bacillus licheniformis	**1,500,000 CFU / mL**
Total endomycorrhizae	**37.8 thousand propagules / gal**
Glomus intraradices, etunicatum, aggregatum, mosseae	**2.5 propagules / mL each**
Total Trichoderma	**2.8 billion CFU / gal**
Trichoderma viride, T. harzianum	**375,000 CFU / mL each**

Rates · Sigma Liquid Foundation Program

Spray interval	oz / acre	oz / 1,000 ft²
Weekly (7-day)	**11**	0.25
14-day	**22**	0.5
21-day	**33**	0.75
28-day	**44**	1

Set per acre per week; multiply by the weeks between sprays.

Tank order

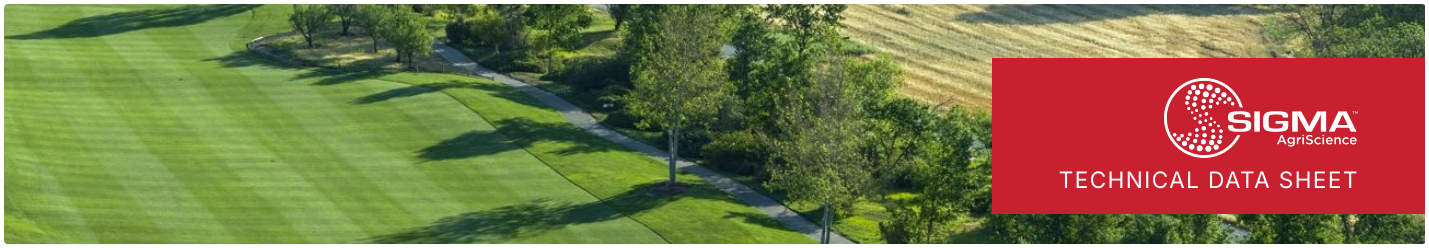
Fill one-third with water and agitate. Add Sigma Bio, Molasses, Microalgae, Biochar 5m, Seaweed, then K-Ferm. Build the scheduled spray on top (nutrients, then W-A-L-E-S). Watch for partners at pH 8 or higher. Jar test; water in within 36 hours.

Notes

- Dormant inoculum to active colonization in about 3 days
- Foliar and soil applications give equal results; water in within 36 hours
- Pair with Sigma Molasses and Seaweed as food sources

Packaging: 2.5 gal (9.46 L) · 275 gal tote (1,041 L).
Compatible with fungicides, insecticides, PGRs, wetting agents and fertilizers in the same application. Store in the original container; protect from freezing.

Values from current Sigma product literature. Sigma products are not pesticides. Always read and follow the product label; confirm state registration.



TECHNICAL DATA SHEET

KELP
Liquid · 100% Ascophyllum nodosum extract

Sigma Seaweed

Long-term food source and translocator

100% kelp extract from sustainably harvested Ascophyllum nodosum, extracted to preserve bio-actives. In the Foundation Program it is the consumable organic matter that drives colonization of the biology.

Stress tolerance
Betaines, polysaccharides, mannitol and proline help turf through drought, heat, cold and salinity.

Nutrient uptake
Alginic acid and mannitol improve uptake of Ca, Mn, Mg, Fe, B, Cu and Zn.

Soil biology
Amino acids, alginic acid and natural sugars feed soil microbes.

Guaranteed analysis

Total nitrogen (N)	**0.1%**
Water-soluble nitrogen	**0.1%**
Soluble potash (K_2O)	**0.1%**
Derived from	**Kelp extract (Ascophyllum nodosum)**
Organic matter	**40% by weight**
pH	**4.5**

Notes

- Fine-filtered for sprayer compatibility; no fillers, not diluted
- Low pH helps other active ingredients in the tank perform

Rates · Sigma Liquid Foundation Program

Spray interval	oz / acre	oz / 1,000 ft²
Weekly (7-day)	**22–44**	0.5–1
14-day	**44–88**	1–2
21-day	**66–132**	1.5–3
28-day	**88–176**	2–4

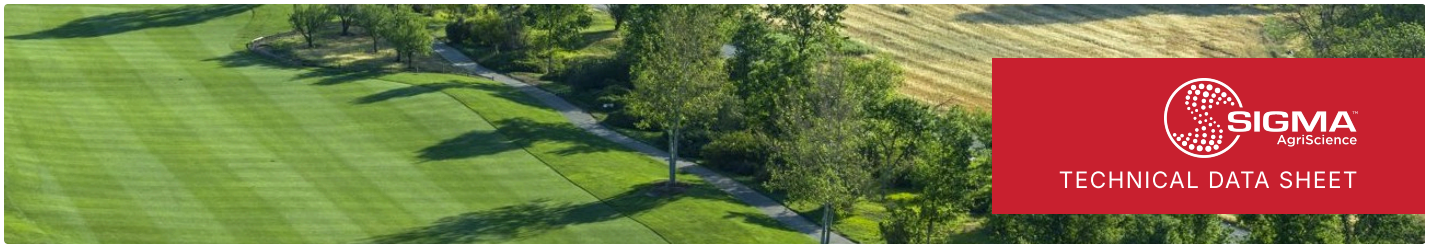
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TECHNICAL DATA SHEET

0-0-2
Liquid · high-brix 100% cane molasses

Sigma Molasses

Short-term food source

Water-soluble, high-brix cane molasses with simple sugars, vitamins and minerals: the fastest food source for early biological colonization, and energy for thatch consumption.

Microbe boost
Natural sugars rapidly increase microbe populations; works best with Sigma Bio.

Plant boost
Carbohydrates, vitamins and minerals provide a quick energy source.

Easy to apply
Low viscosity, water soluble; usable in drip irrigation.

Guaranteed analysis

Soluble potash (K_2O)	**2.0%**
Derived from	**Molasses**

Notes

- 100% pure cane molasses: no fillers, not diluted

Rates · Sigma Liquid Foundation Program

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14-day	**22**	0.5
21-day	**33**	0.75
28-day	**44**	1

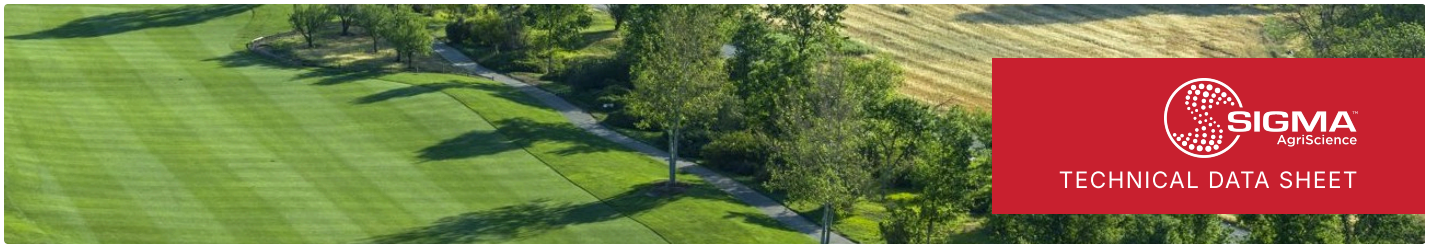
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TECHNICAL DATA SHEET

10%
Liquid · pasteurized whole-cell microalgae

Sigma Microalgae

Mid-range food source: proteins, lipids, carbohydrates

A proprietary pasteurized single-cell microalgae, 10% by weight, supplying proteins, lipids and carbohydrates to feed the strains in Sigma Bio and boost soil microbial activity.

Microbial activity
Fuels increases in beneficial soil microbial populations and diversity.

Nutrient availability
Maximizes the effectiveness of natural and applied nutrients.

Soil structure
Secretions bind fine, medium and large particles: better aggregation, pore space and water holding.

Active ingredients

Microalgae	**10%**
Protein	**24 g / L**
Lipids	**21 g / L**
Carbohydrates	**44 g / L**
pH	**3.5**

Notes

- Low pH locally buffers the soil biome toward neutral

Rates · Sigma Liquid Foundation Program

Spray interval	oz / acre	oz / 1,000 ft²
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14-day	**44**	1
21-day	**66**	1.5
28-day	**88**	2

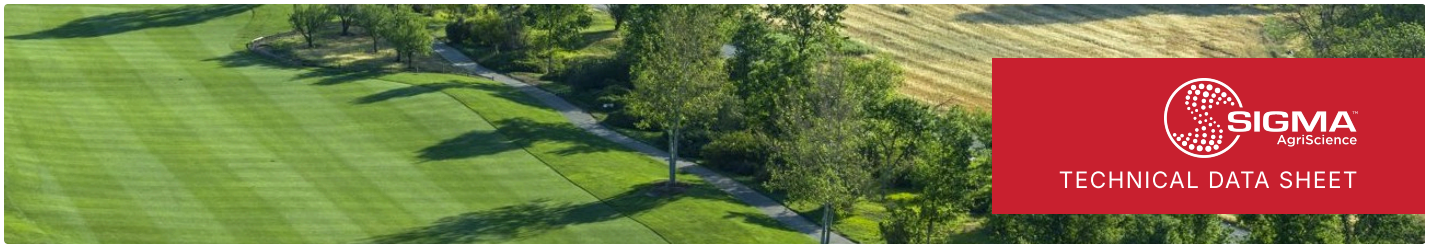
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5 µm
Liquid · wet-milled biochar suspension

Sigma Biochar 5m

Long-term home for the biology

Wet-milled softwood biochar at 5 microns, 20 times smaller than a human hair, that stays in suspension. Superior porosity and hydrophilic properties improve soil structure and give the biology a lasting home.

Water and nutrient retention
Fine particles and large surface area keep water and nutrients where roots need them.

Microbial habitat
Porosity creates a home where beneficial microbes colonize, survive and replicate.

Soil structure
Aggregation, better breathing, less hydrophobicity.

Guaranteed analysis

Soil-amending ingredient	**Softwood biochar 1%**
Other ingredients (inert, non-plant food)	**99%**
Particle size	**5 micron**
Surface area	**342 m² / g; 694 acres / cu ft**

Notes

- 65% more surface area than 75-micron suspended biochar
- Compatible with tank partners and standard spray equipment

Rates · Sigma Liquid Foundation Program

Spray interval	oz / acre	oz / 1,000 ft²
Weekly (7-day)	**22**	0.5
14-day	**44**	1
21-day	**66**	1.5
28-day	**88**	2

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